Multiview Seamless Switcher

EXT-HD-MVSL-441

User Manual

Release A4

Gefen®

Important Safety Instructions

GENERAL SAFETY INFORMATION

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

Warranty Information

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

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4x1 Multiview Seamless Switcher for HDMI is a trademark of Gefen, LLC.

Important Notice

Gefen, LLC reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.

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Features and Packing List

Features

- Seamless switcher with 4 inputs
- Adjustable scaling and resizing of each input
- Display up to 4 windows on a single display
- Input and Output resolutions up to 1080p Full HD and 1920x1200 (WUXGA)
- HDCP compliant
- Seamless switching ensures no switching delay and no picture loss during transitions
- Default pre-configured Multiview window arrangements can be accessed via five front panel preset push-buttons
- Custom user-configurable Multiview window layouts can be accessed via five front panel preset push-buttons
- User-selectable playback of HDMI audio content from any of the four inputs
- Controllable via front panel controls, IR, IP (web server interface, Telnet, and UDP), and RS-232
- Easy to use on-screen Graphical User Interface (GUI) and web server interface
- Handheld IR remote control and IR Extender input on back panel
- Field-upgradable firmware via web server interface
- USB port (reserved for future product enhancements)
- Locking power supply connector
- 1U tall rack-mountable enclosure, rack ears included

Packing List

The 4x1 Multiview Seamless Switcher for HDMI ships with the items listed below. If any of these items are not present in your box when you first open it, immediately contact your dealer or Gefen.

- 4x1 Multiview Seamless Switcher
- 4 x 6 ft. Locking HDMI Cables
- 1 x 6 ft. DB-9 Cable
- 1 x 12V DC Power Supply
- 1 x IR Extender Module
- 1 x IR Remote
- 1 x Set of Rack Ears
- 1 x Quick-Start Guide

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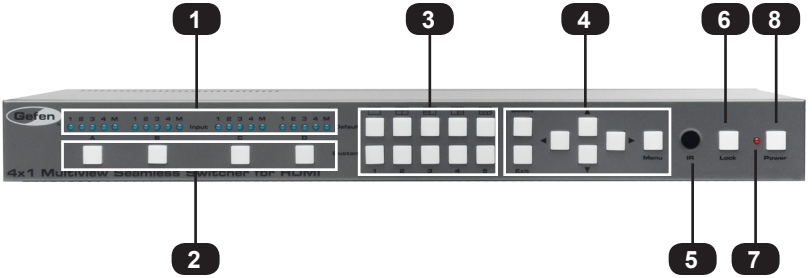
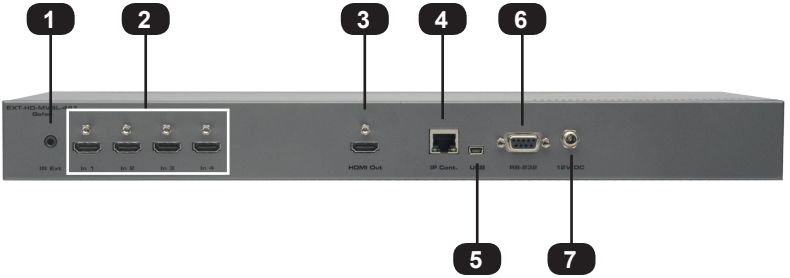
Panel Layout

Front



ID	Name	Description
1	Input Indicators	These LED indicators display the state of each input. See Window Basics for more information.
2	Window Buttons	Press these buttons to display up to four windows on a single display.
3	Window Presets	Use these buttons to select the desired window configuration. Five default presets and 5 user-definable window presets are available. See Window Basics for more information.
4	Menu System Controls	Use these buttons to select and change settings within the built-in menu system. See Menu System for details.
5	IR	This IR sensor receives signals from the included IR remote control unit.
6	Lock	Use this button to lock the 4x1 Multiview Seamless Switcher and prevent accidental changes. See Locking / Unlocking the Switcher for more information on this feature.
7	Standby LED Indicator	This LED will remain illuminated when the 4x1 Multiview Seamless Switcher is powered OFF.
8	Power	This button is used to power ON and power OFF the 4x1 Multiview Seamless Switcher. This button will remain illuminated while the switcher is powered ON.

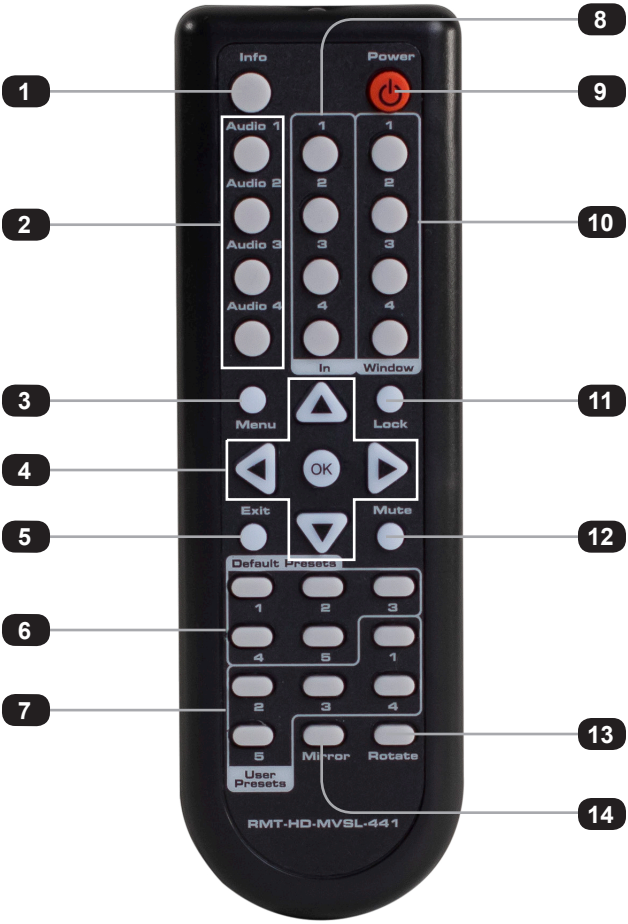
Back



ID	Name	Description
1	IR Ext	Connect the included IR Extender (Gefen part no. EXT-RMT-EXTIRN) to this port.
2	In (1 - 4)	Connect up to four Hi-Def sources to these inputs using HDMI cables.
3	HDMI Out	Connect an HDMI cable from this port to an HD display.
4	IP Cont.	Connect an Ethernet cable between this jack and a LAN to use IP control. Refer to RS-232 and IP Configuration for more information on setting up IP control.
5	USB	Used for upgrading the firmware. See Upgrading the Firmware for more information.
6	RS-232	Connect an RS-232 cable from this port to an RS-232 device. See RS-232 and IP Configuration for more information on setting up RS-232 control.
7	12V DC	Connect the included 12V DC power supply from this power receptacle to an available AC electrical outlet. Do not overtighten the locking connector on the power receptacle.

IR Remote Control Unit

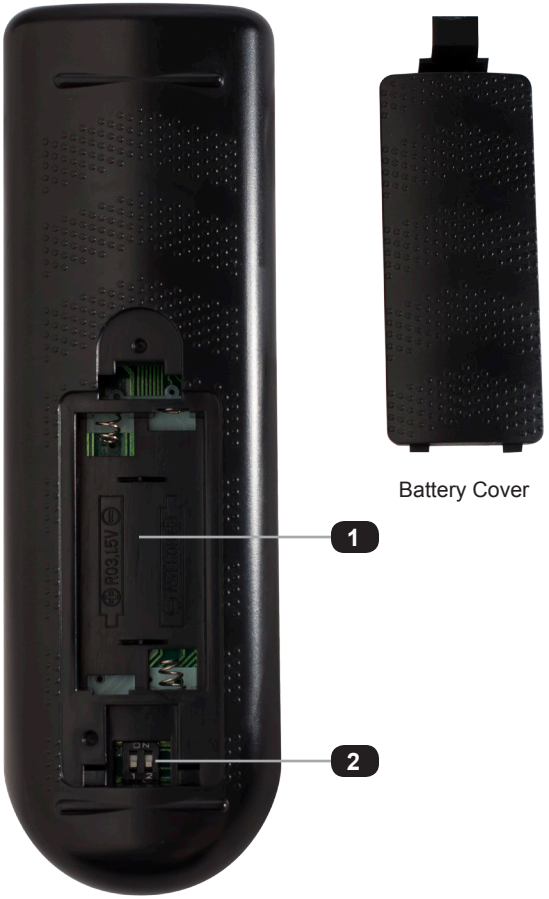
Top



ID	Name	Description
1	Info	Used to toggle notifications on all outputs.
2	Audio (1 - 4)	Selects the audio source to be used on the output.

ID	Name	Description
3	Menu	Press this button to display the built-in menu system.
4	◄/►/▲/▼/OK	Used to access and change features within the menu system. Use the arrow buttons to move around within the menu system or change a value. Press the OK button to make a selection within the menu system.
5	Exit	Press this button to exit the main menu or exit from sub-menus.
6	Default Presets	Use these button to select the desired window configuration. See Window Basics for information on selecting window configurations.
7	User Presets	These buttons are used to store custom window configuration presets. See Window Basics for more information.
8	In (1 - 4)	Use this buttons to select the input.
9	Power	Press this button to power-ON or power-OFF the Multiview Seamless Switcher.
10	Window (1 - 4)	Use these buttons to select the desired window. Each of these buttons is associated with the buttons on the front panel (Window A - D). See Window Basics for more information on working with windows and inputs.
11	Lock	Press this button to lock or unlock the 4x1 Multiview Seamless Switcher.
12	Mute	Mutes the audio on all outputs.
13	Rotate	*This feature will be available in a future release of firmware.*
14	Mirror	Applies a horizontal transformation (rotated 180° about the y-axis) to window output A.

Bottom



ID	Name	Description
1	Battery slot (shown without batteries)	Holds the batteries for operating the IR remote. Use only 1.5V “AAA”-type batteries. See Installing the Batteries for information on battery installation.
2	DIP switch bank	Use these DIP switches to set the IR channel of the remote. See Setting the IR Channel for details.

Installing the Batteries

1. Remove the battery cover on the bottom of the IR remote control unit.
2. Make sure that the batteries are installed with the correct polarity, as shown in the illustration, below. Always use two 1.5V AAA-type batteries.
3. Replace the battery cover.

Battery Cover

WARNING: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Setting the IR Channel

NOTE: The IR remote must be set to channel 0 in order to communicate with the 4x1 Multiview Seamless Switcher for HDMI.

Make sure that the IR remote is set to channel 0 (see the diagram, below). Otherwise, the switcher will not work with the IR remote. Future releases of the firmware will allow the IR channel to be changed.

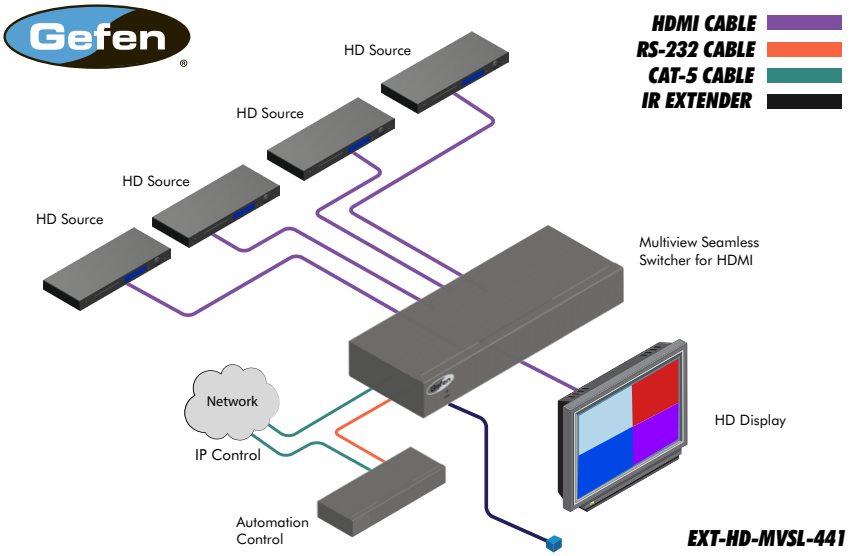
IR Channel	DIP settings
0	
1 (not used)	
2 (not used)	
3 (not used)	

Installation

Connecting the 4x1 Multiview Seamless Switcher for HDMI

1. Connect up to four Hi-Def sources to the input ports (**In 1** - **In 4**) ports on the 4x1 Multiview Seamless Switcher.
2. Connect an HD display to the **HDMI Out** port on the 4x1 Multiview Seamless Switcher.
3. OPTIONAL: Connect an RS-232 cable from the **RS-232** port on the 4x1 Multiview Seamless Switcher to the RS-232 connector on the automation controller.
4. OPTIONAL: Connect an Ethernet cable from the I**P Control** port on the 4x1 Multiview Seamless Switcher to a Local Area Network (LAN).
5. OPTIONAL: Connect the included IR extender to the **IR Ext** port on the 4x1 Multiview Seamless Switcher.
6. Connect the included 12V DC locking power supply to the power receptacle on the 4x1 Multiview Seamless Switcher. Do not overtighten the locking power connector.
7. Connect the power supply to an available electrical outlet.

Sample Wiring Diagram



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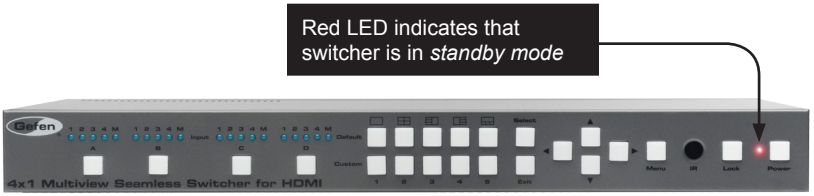
Introduction

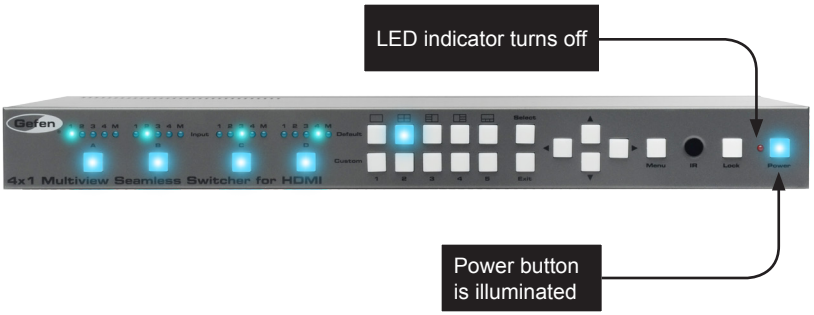
Standby Mode

The LED next to the **Power** button, on the front panel, indicates the power state of the 4x1 Multiview Seamless Switcher for HDMI. In *standby mode*, power is being supplied to the 4x1 Multiview Seamless Switcher for HDMI but the unit is not turned on. This LED will be red and remain illuminated as long as the unit is in *standby mode*. If this LED does not illuminate, check the connection between the power receptacle on the 4x1 Multiview Seamless Switcher for HDMI and the AC outlet.



Turning on the 4x1 Multiview Seamless Switcher for HDMI

Press the **Power** button to power-on the switcher. The **Power** button will turn blue and remain illuminated as long as the switcher is powered-on. To power-off the 4x1 Multiview Seamless Switcher for HDMI and return to *standby mode*, press the **Power** button again.

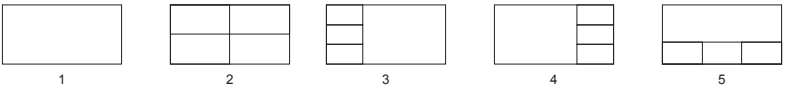


Window Basics

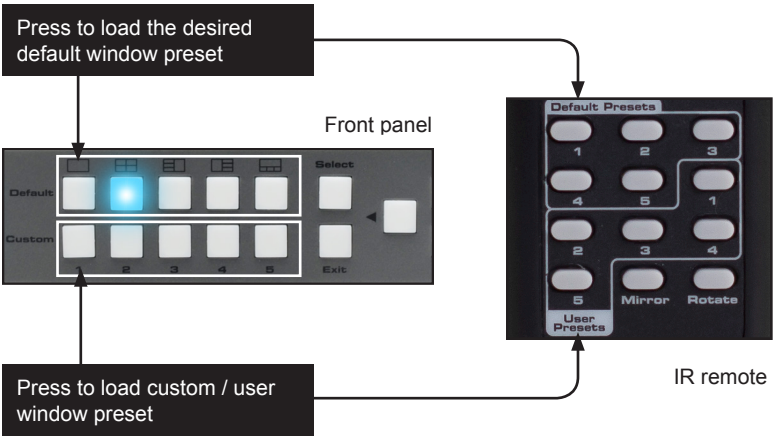
Selecting a Window Configuration

The 4x1 Multiview Seamless Switcher for HDMI provides the ability to display four Hi-Def sources on one HD display. In addition, the 4x1 Multiview Seamless Switcher for HDMI allows the creation of an infinite number of window configurations using the built-in Web interface. Windows can be individually scaled, resized, and positioned within any area of the display area.

The 4x1 Multiview Seamless Switcher for HDMI comes with 5 *default* window presets. An illustration of each of these window presets is displayed above each of the Default preset buttons on the front panel:



These presets can be selected from the top-row of buttons on the front panel.
The button for the currently selected window configuration will turn blue and remain illuminated as long as the preset is selected.



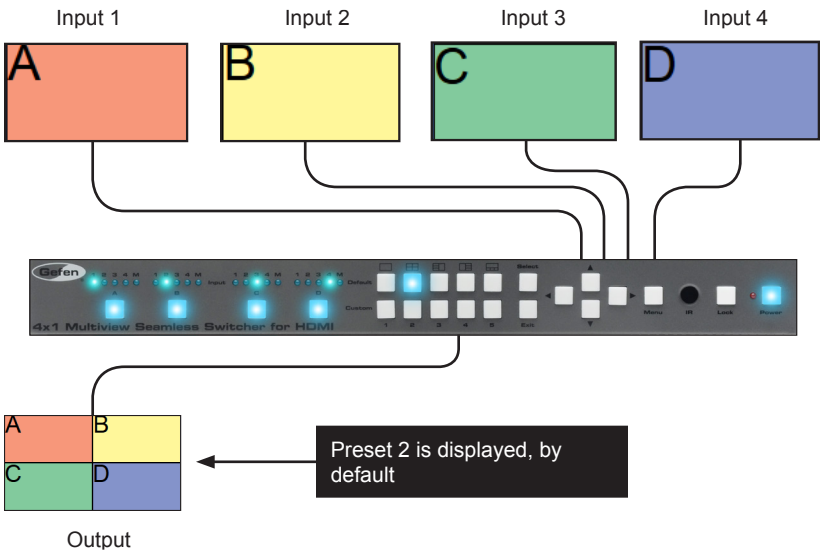
The bottom row of buttons are used to store and recall *custom* presets. Custom presets are created and saved using the built-in Web interface. See the Presets section of the Web interface for more information.

When the 4x1 Multiview Seamless Switcher for HDMI is shipped from the factory, the Default 2 preset will be automatically loaded when the unit is powered-ON.

Single Window Nomenclature

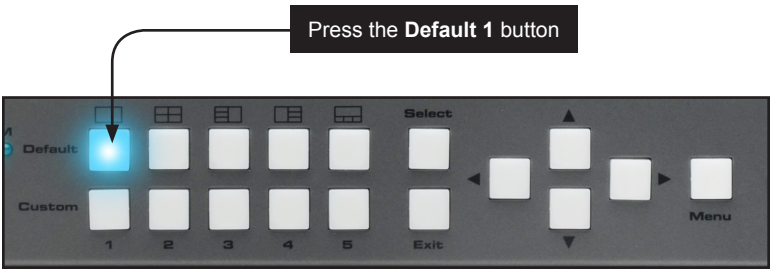
The 4x1 Multiview Seamless Switcher for HDMI can display up to four sources on one display. When multiple sources are displayed on the screen, we refer to each source as a *window*. In general terms, a *window* is defined as an input. However, before we discuss multiple windows, we will define the operation of a single window.

In our example, below, we have four Hi-Def sources connected to the 4x1 Multiview Seamless Switcher for HDMI. Each source is represented by a colored rectangle. When the 4x1 Multiview Seamless Switcher for HDMI is shipped from the factory, the Default 2 preset will automatically be loaded when the unit is powered ON:



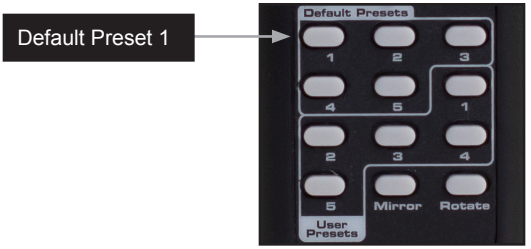
Now, let's look at one of the default presets that displays a single-window output:

1. Press the Default 1 button on the front panel.

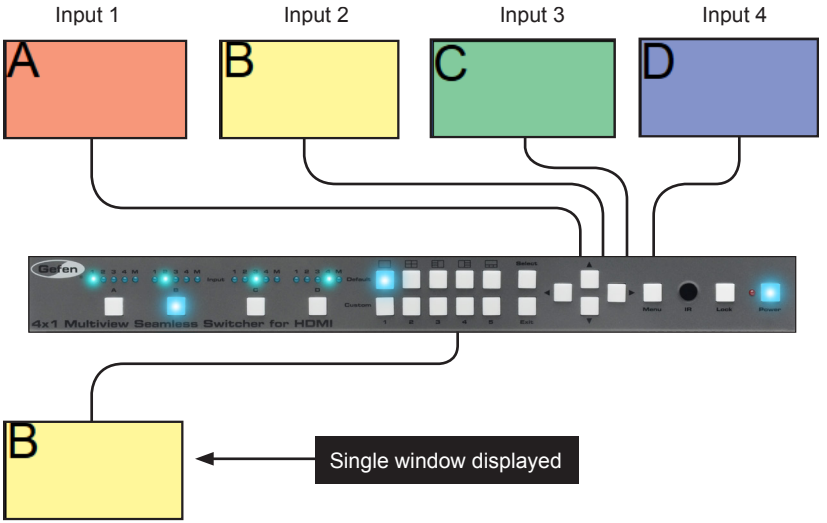


The Default 1 preset uses *Window A*:

To switch to the Default 1 single-window configuration using the IR remote control, press the Default Preset 1 button.



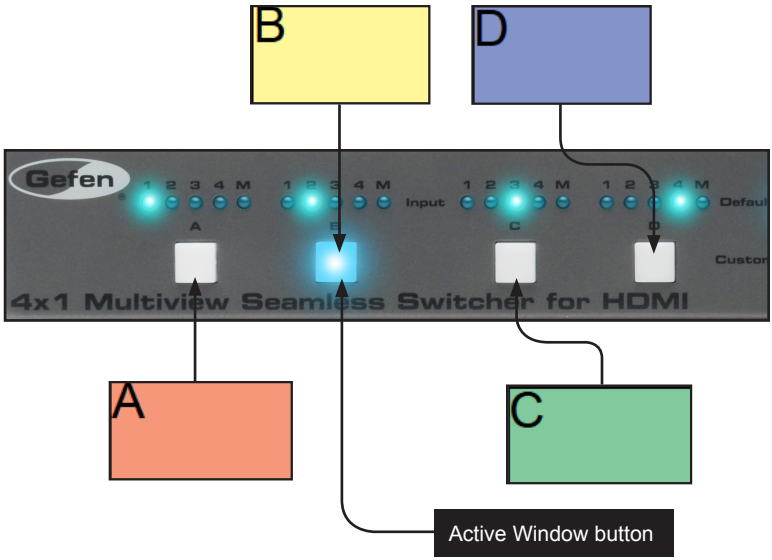
2. The image displayed on the output will be dictated by the current routing state of the matrix. In this example, the source that is connected to Input 2 is displayed.



(continued on next page)

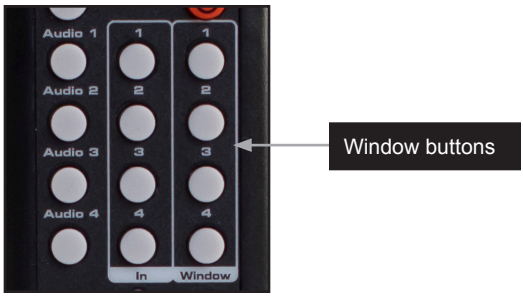
Note that on the previous page that Window B is displayed. This is because the button for Windows B was pressed. The button for the current Window will remain illuminated until another Window button is pressed.

In single-window mode, each Window button (A - D) on the front panel represents one of the four inputs.



3. Try pressing each of the Window buttons on the front panel and observe how the image on the display changes.

   The included IR remote control can also be used to switch between Windows by pressing the Window buttons.



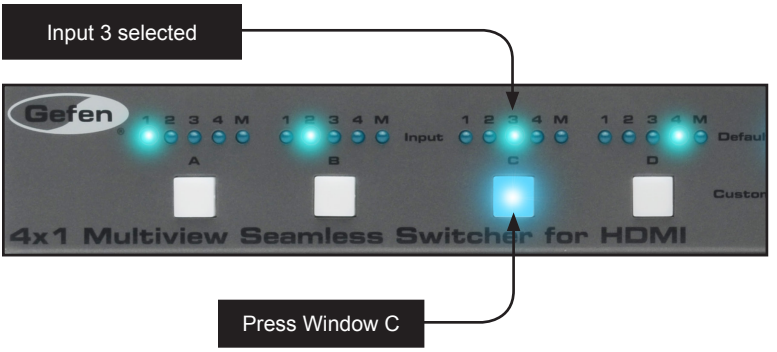
Changing the Routing State (Single Window)

There are two methods for performing this operation: 1) Select a different Window button with a different input . 2) Change the routing state for the current output. We will cover both methods.

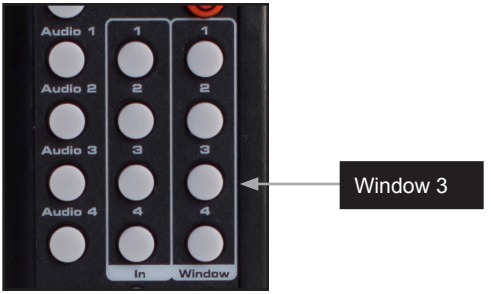
For this example, we want to view the source connected to Input 3.

Method 1:

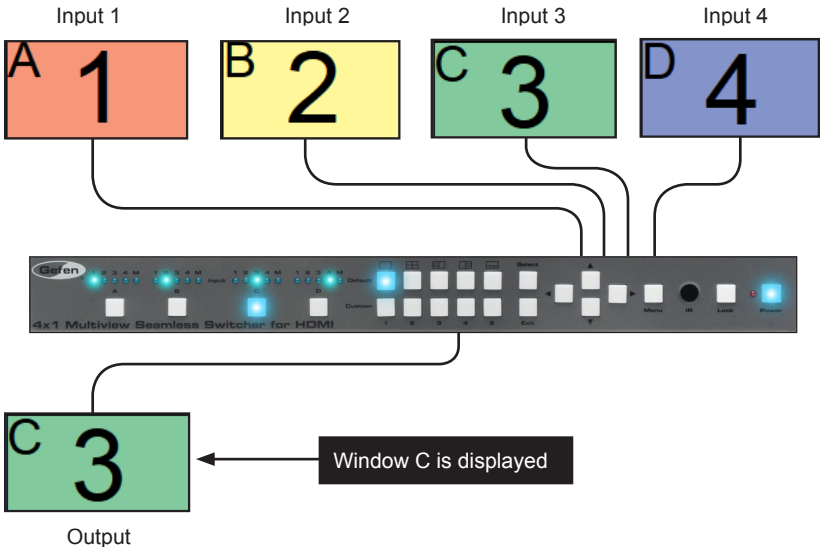
1. Press Window C on the front panel.



If using the IR remote control, press the Window 3 button.



2. The numbers in each of the colored boxes, below, represent the currently select input for each Window. Since Input 3 has already been routed to Window C, the source connected to Input 3 will be displayed:



Method 2:

1. Press the button for Window B on the front panel to select it.
2. Press the button for Window B again to select Input 3.

   If using the IR remote control, press the Window 2 button, then press the In 3 button.
3. Input 3 has now been routed to Window B. Since Window B is the active output, the source connected to Input 3 will be displayed:

Note that the Window name is the same. The only difference is that the input has changed.

Multiple Window Nomenclature

NOTE: The 4x1 Multiview Seamless Switcher for HDMI is designed to be used as a 2x2 video wall. 4x1 rows and 1x4 columns are not supported.

To recap, the 4x1 Multiview Seamless Switcher for HDMI can display up to four sources on one display. When multiple sources are displayed on the screen, we refer to each source as a *window*. In general terms, a *window* is defined as an input. It is recommended that the Single Window Nomenclature section be read before continuing.

When working with a single window, we saw how we could switch inputs, allowing us to view different sources, one at a time.

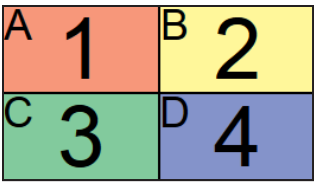
In order for the switcher to display more than one window at a time, the switcher identifies each window using an alphabetic character.

Default 1 preset is identified as *Window B*.

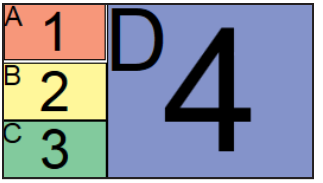
Default 2 preset is identified as follows:

Each window is also assigned a default input, which is notated by a numeral from 1 to 4.

Window A will use Input 1, Window B will use Input 2, and so on. Of course, any input can be assigned to any window.



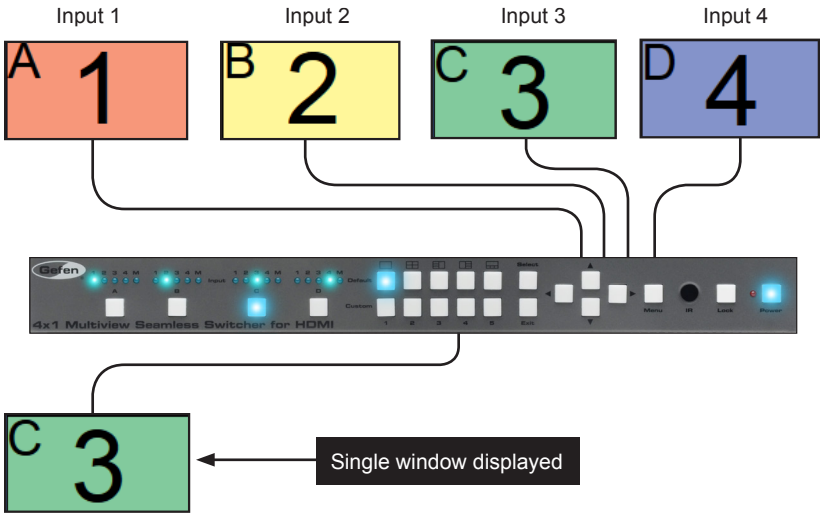
Another example is the Default 3 window preset:



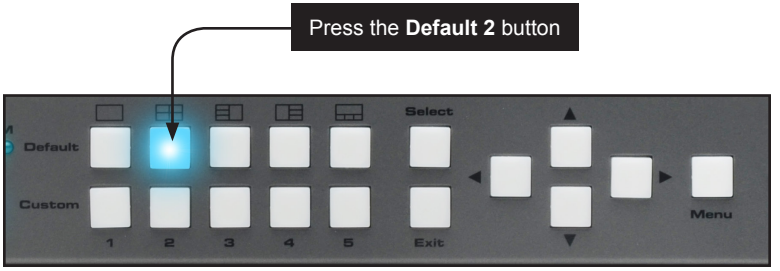
Although the arrangement of each window--or the input to each window--can be different, the window ID (A - D) does not change.

When using multiple windows, multiple window buttons will active. We will continue with the last example in the Single Window Nomenclature section to the difference.

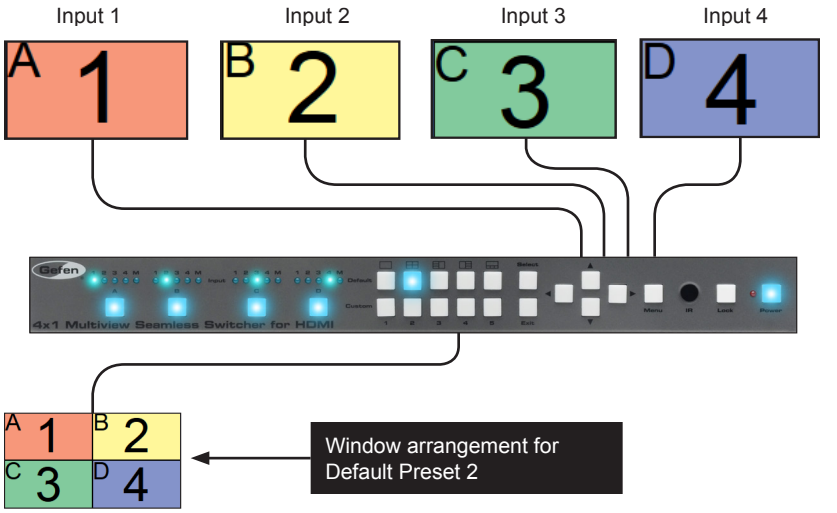
In the illustration, below, Window C has been selected. Input 3 is routed to Window C. Therefore, the source connected to Input 3 is displayed.



1. Press the Default 2 button. This will create a basic 2x2 multi-window display.

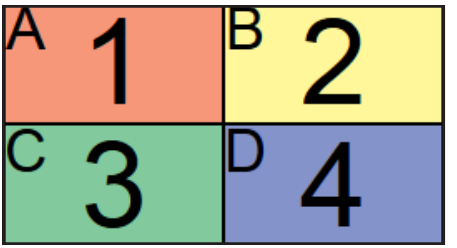


2. The image on the output will be equally divided into four windows. This window arrangement is used by Default Preset 2.

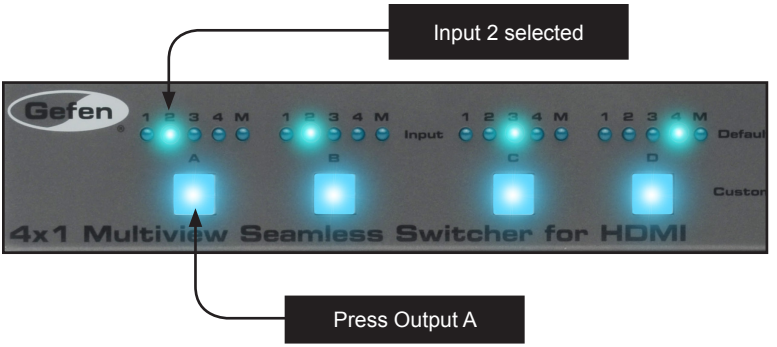


3. Now, let's change the routing state so that the source connected to Input 2 covers the top half of the screen.

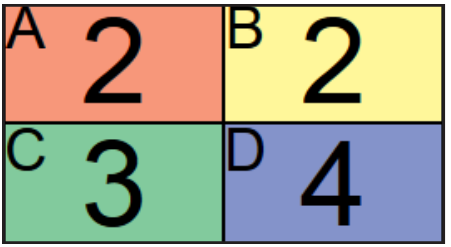
   If we look at our window template for Default 2, we can see that routing Input 2 to Window A will accomplish this task.



4. Press the button for Output A once. The LED indicator will change from Input 1 to Input 2.



5. The output on the display will now appear, as follows:



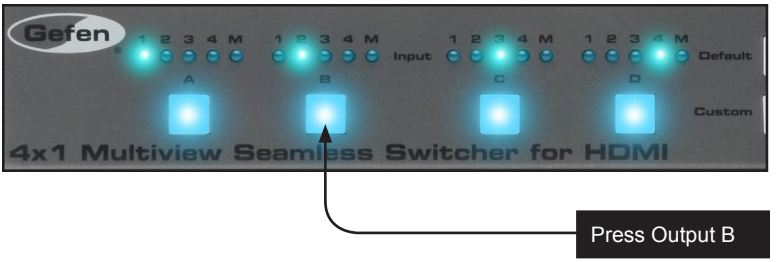
Masking / Unmasking Outputs

NOTE: Masking must be performed by using the buttons on the front panel or through the built-in Web interface.

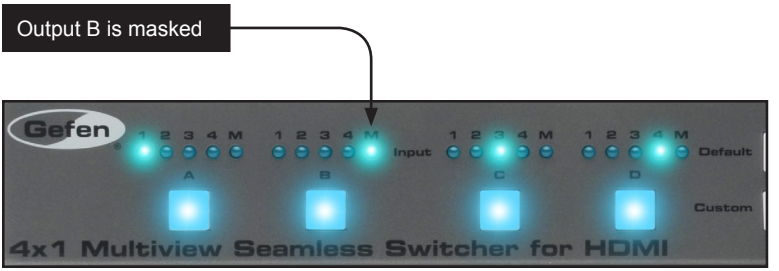
"Masking" prevents a window from displaying the signal from the source device. Instead of powering-down or disconnecting the input device, individual or multiple outputs can be masked. Masking can be used with single window and multiple-window configurations.

Using the Front Panel Buttons

1. Press the button of the desired output to be masked. For this example, we will select Window B:



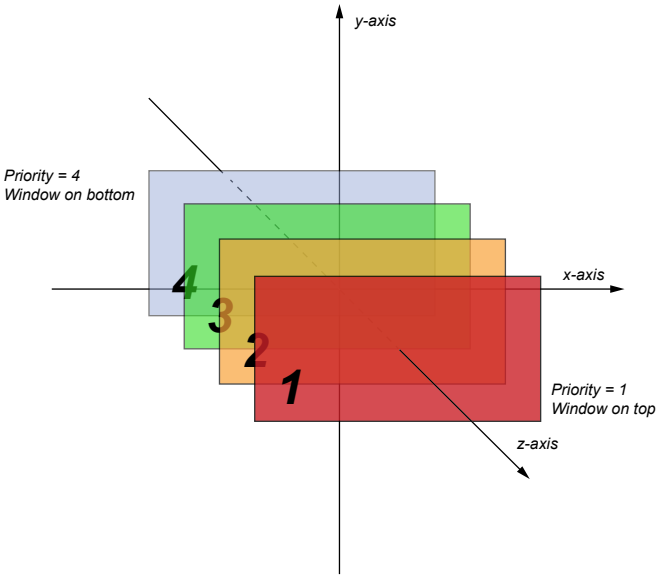
2. Continue pressing the button for Window B until the "M" LED indicator is illuminated.



3. To unmask an window, press the button for the window and select the desired input.

Window Priority

The built-in Web interface allows windows to be resized and arranged in any order. Windows can also be placed above or below one another. The ordering of overlapping objects in two-dimensional space is sometimes referred to as the *z-order*.



NOTE: Window B is always set to priority 1 and cannot be changed. Refer to Single Window Nomenclature for more information.

In the illustration above, the red window is set to priority 1 and will be displayed on top of all other windows. Setting a window to priority 4 (the blue window) will move the window to the bottom-most position. The *smaller* the number, the *higher* priority. Multiple windows *cannot* share the same priority.

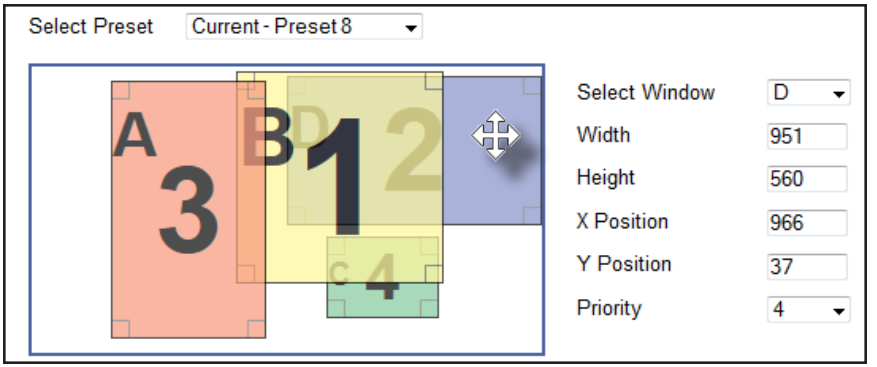
Note that the 4x1 Multiview Seamless Switcher for HDMI does not allow a window to have a transparency property. This is only used by the diagram, above, to illustrate how windows can be placed behind or in front or one another.

Assigning Window Priority

1. Access the Web interface for the 4x1 Multiview Seamless Switcher for HDMI. See the Web Interface for more information.

2. Go to the Window Setup page of the Web interface.

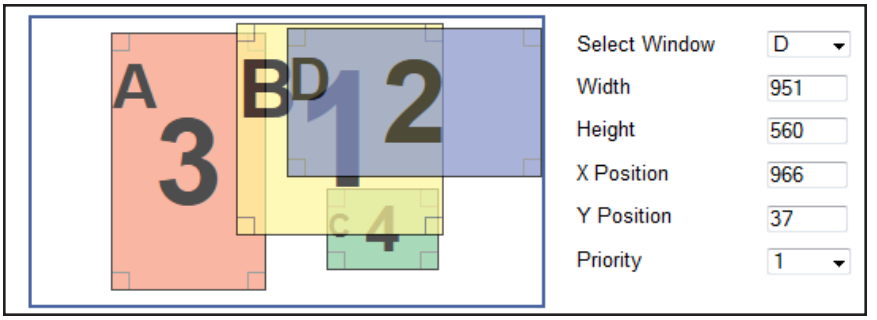
3. We've selected Preset - 8 from the **Select Preset** drop-down list. We've also repositioned and resized the windows, as follows:



4. Select one of the windows by clicking on it or selecting it from the **Select Window** drop-down list. For this example, we are going to select window D and make it the top-most window.

5. The current priority of the selected window will appear in the **Priority** drop-down list.

6. Select 1 from the **Priority** drop-down list.



7. Window D is now the top-most window. This window can be positioned anywhere within the interactive workspace and the window will appear on top of all windows.

8. Click the **Save** button to save any changes to the preset.

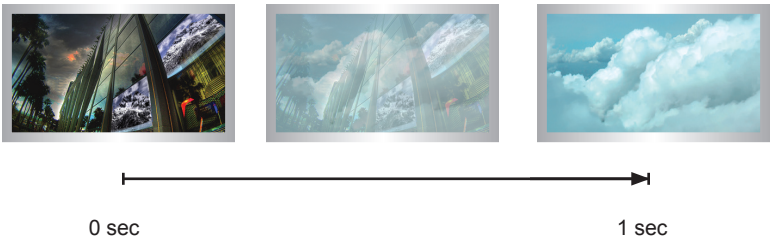
Video Effects

NOTE: Video effects are only applicable to single-window applications. Multiple-window effects are not supported.

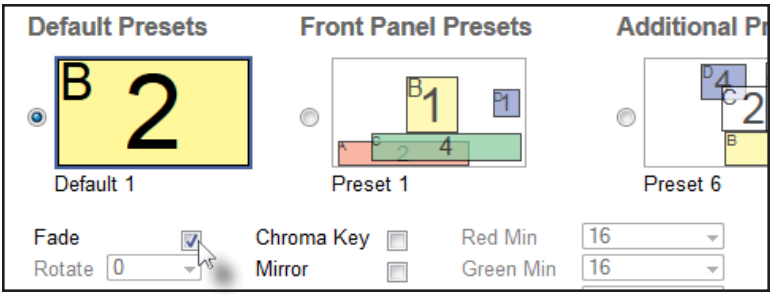
When using single windows, the 4x1 Multiview Seamless Switcher for HDMI provides three unique post-production video effects: Fade, Chroma Key, and Mirror.

Using Fade

The *fade* effect applies a one-second cross-dissolve transition when switching between windows that are receiving video from different sources. This feature, as with all video effects, is only available when viewing a single window output.



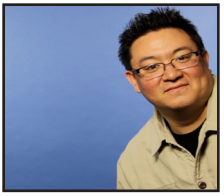
1. Access the Web interface for the 4x1 Multiview Seamless Switcher for HDMI. See the section Web Interface for more information.
2. Selecting the **Routing** tab.
3. Click the radio button next to the **Default 1** preset.
4. Click to place a check mark in the **Fade** check box.



5. To see the fade effect, switch between outputs using the IR remote control or the window buttons on the front panel.

Using Chroma Key

The *chroma key* effect, also referred to as “color-keying”, is a post-production technique for layering two images or video signals together. The first layer involves filming a subject in front of a solid color background. The second layer serves as the background for the final composite image. By combining the two images together and removing (“keying”) the background color from the first layer, the subject will appear in front of the background from the second layer. When chroma-keying a live feed (e.g. a meteorologist standing in front of a weather map), a “traveling matte” is created.

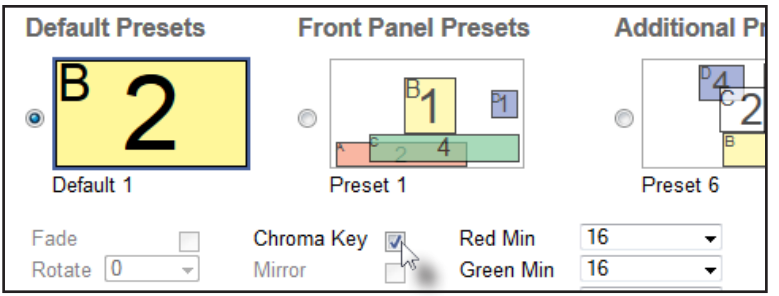


Subject
(Window B)

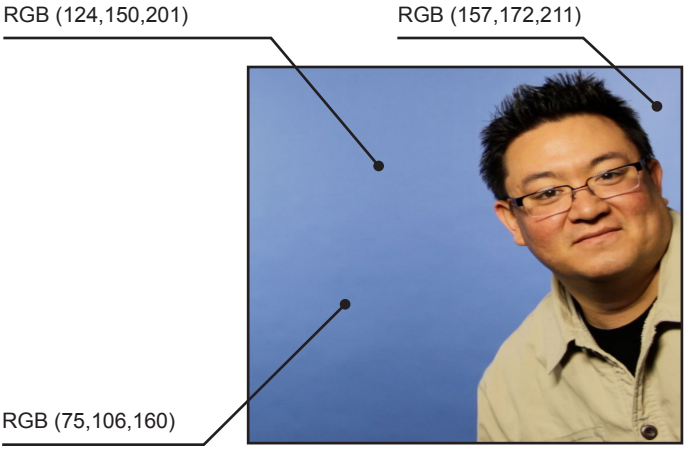
Background
(Window A)

Final Composite
(Window B)

1. Access the Web interface for the 4x1 Multiview Seamless Switcher for HDMI. See the section Web Interface for more information.
2. Selecting the **Routing** tab.
3. Click the radio button next to the **Default 1** preset.
4. Route the image with the subject and solid color background to **Window B**.
5. Route the background image to **Window B**.
6. Click to place a check mark in the **Chroma Key** check box.



Because shadows and other lighting imperfections are always present when photographing a subject against a solid color background, the background will never be a pure RGB value (as shown below). For this reason, a color range with minimum and maximum values needs to be specified.



7. Set the Min RGB values for the color to be “keyed”.

Red Min	0	Red Max	0
Green Min	16	Green Max	0
Blue Min	32	Blue Max	0

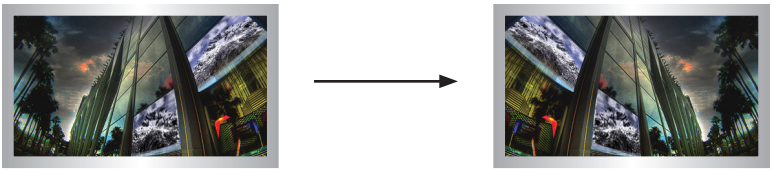
8. Set the Max RGB values for the color to be “keyed”.

Red Min	0	Red Max	0
Green Min	16	Green Max	48
Blue Min	32	Blue Max	240

9. The final composite will be displayed on **Window A**.

Using Mirror

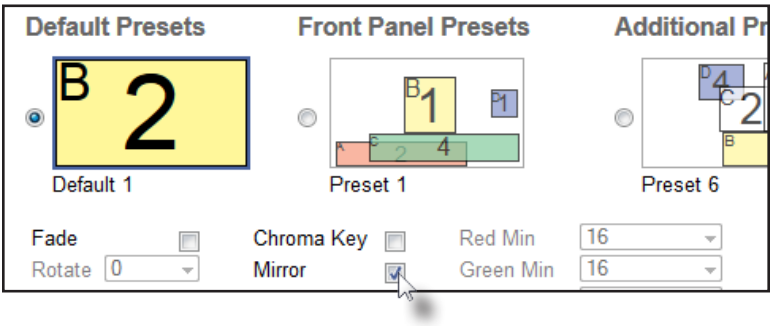
The *mirror* effect, applies a horizontal transformation (rotated 180° about the y-axis) to window Output A.



Window B

Window B (mirrored)

1. Access the Web interface for the 4x1 Multiview Seamless Switcher for HDMI. See the section Web Interface for more information.
2. Selecting the **Routing** tab.
3. Click the radio button next to the **Default 1** preset.
4. Click to place a check mark in the **Mirror** check box.



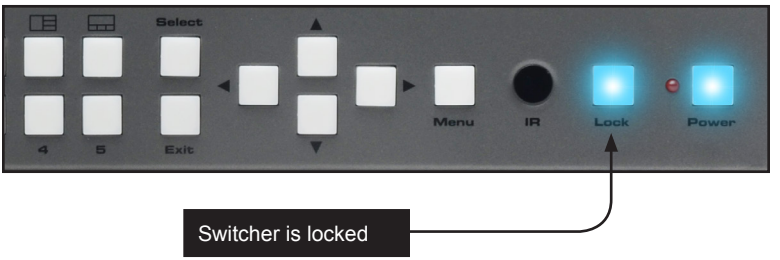
5. The image on **Window B** will be flipped horizontally.

Locking / Unlocking the Switcher

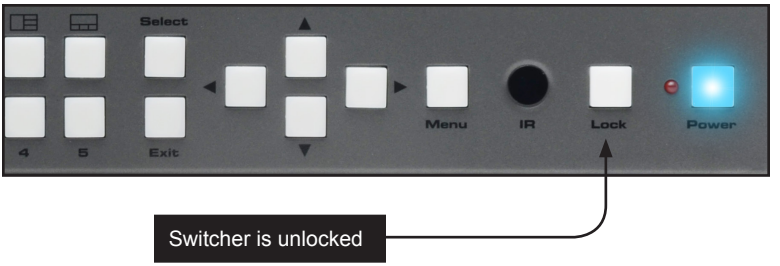
Locking the switcher will prevent any changes by disabling all buttons (except the Lock button) on the front panel. This feature is useful in preventing routing or other changes caused by accidentally bumping or pressing the buttons on the front panel.

Using the Front Panel Buttons

1. Press and hold the **Lock** button on the front panel. The **Lock** button will begin to flash.
2. Continue holding down the **Lock** button until it stops flashing.
3. The switcher is now locked. The **Lock** button will remain illuminated as long as the switcher is locked.



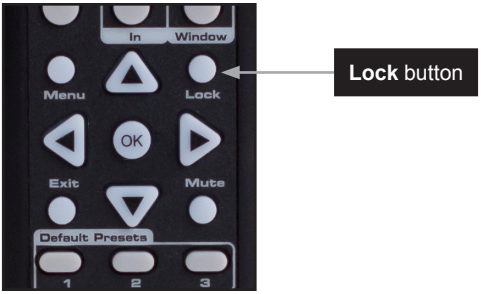
4. To unlock the switcher, press and hold the **Lock** button. The **Lock** button will begin to flash.
5. Continue holding down the **Lock** button until it stops flashing.
6. The switcher is now unlocked and can be used normally.



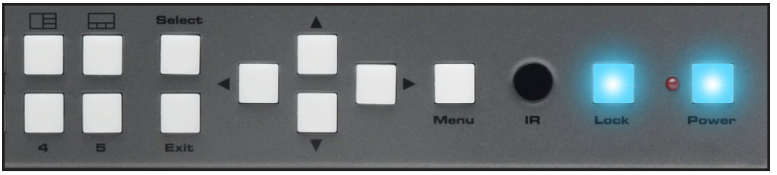
Once the switcher is unlocked, the **Lock** button will no longer be illuminated.

Using the IR Remote Control

1. Press the **Lock** button on the IR remote control.

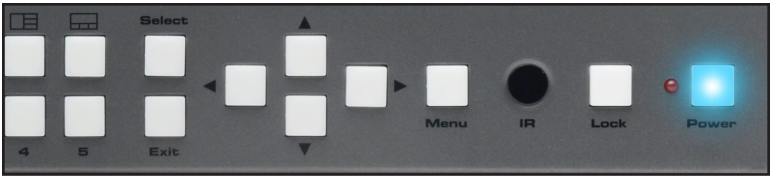


2. The **Lock** button, on the front panel of the switcher, will remain illuminated as long as the switcher is locked.



3. To unlock the switcher, press the **Lock** button. The **Lock** button will turn off.

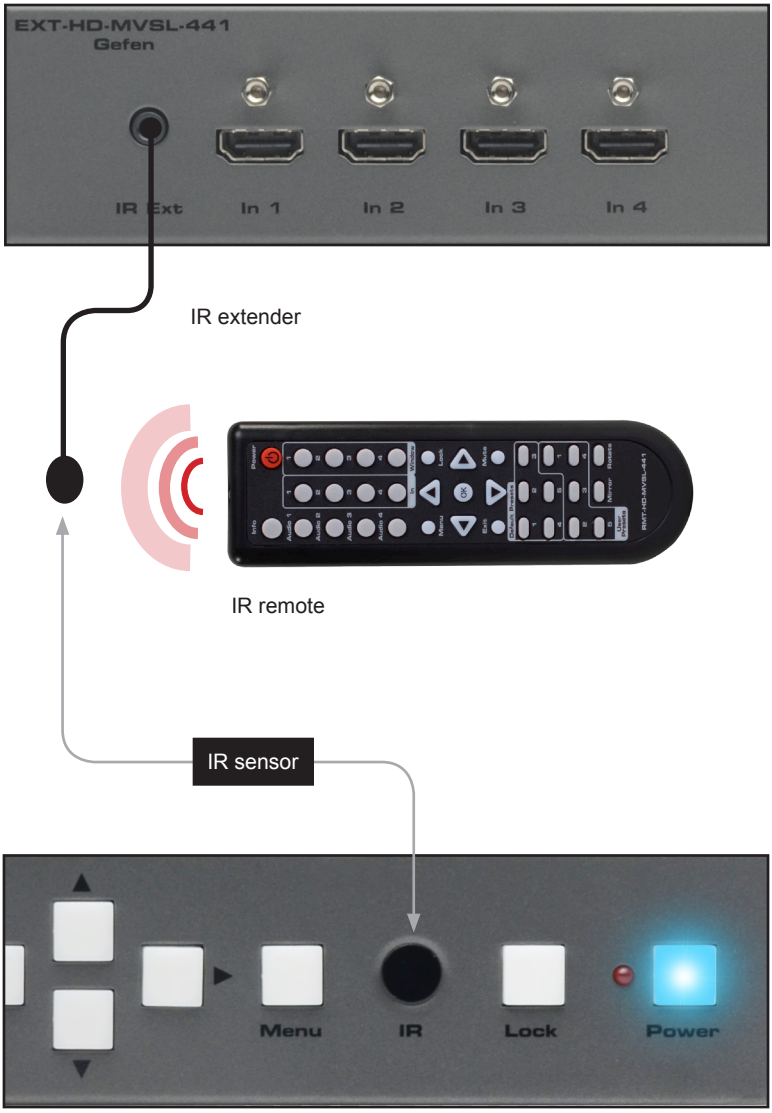
The switcher is now unlocked and can be used normally.



Once the switcher is unlocked, the **Lock** button will no longer be illuminated.

Using the IR Extender

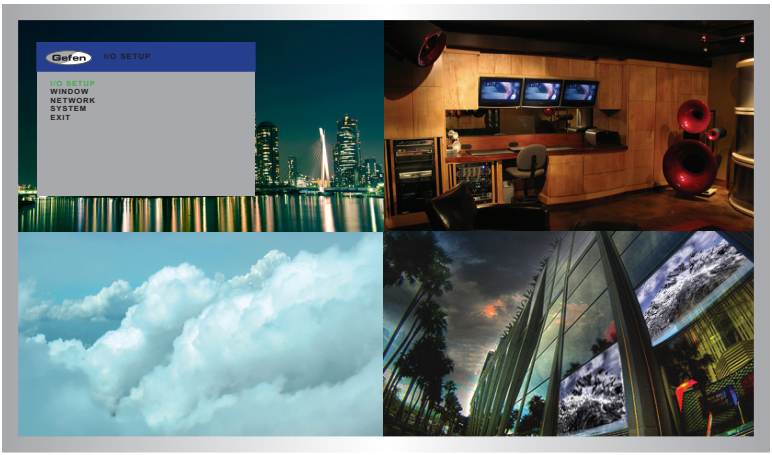
There may be situations where the IR sensor is blocked by a cabinet or other mounting device. In this case, the included IR extender (Gefen part no. EXT-RMT-EXTIRN) can be connected to the **IR Ext** port on the 4x1 Multiview Seamless Switcher. The sensor on the IR extender behaves exactly like the sensor on the front panel of the switcher. Always point the IR remote control unit in the direction of the IR sensor.



Menu System

Accessing the Menu System

The HD Video Wall Controller uses a built-in menu system to manage and control all video features. To access the menu system, press the **Menu** button on the front panel or on the included IR remote control.

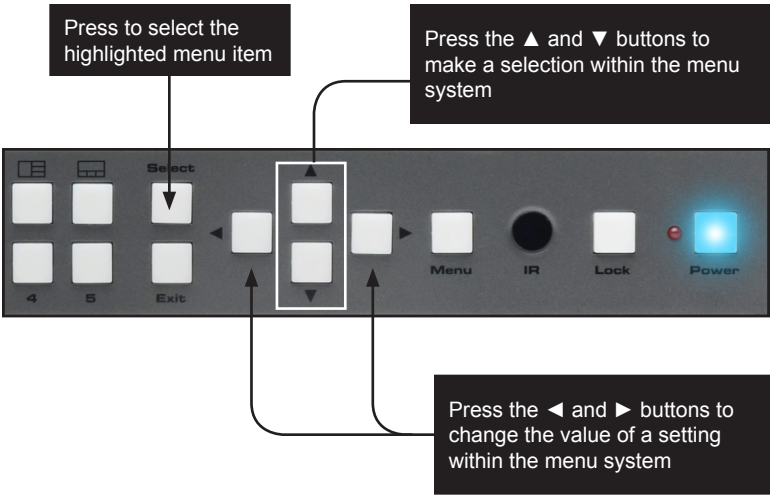


After pressing the **Menu** button on the front panel, the **Menu** button will remain illuminated as long as the menu system is displayed on the screen. By default, the menu system will be displayed within the top-left display.

The time-out value (duration) for the menu system can be changed in the OSD Settings page of the menu system.

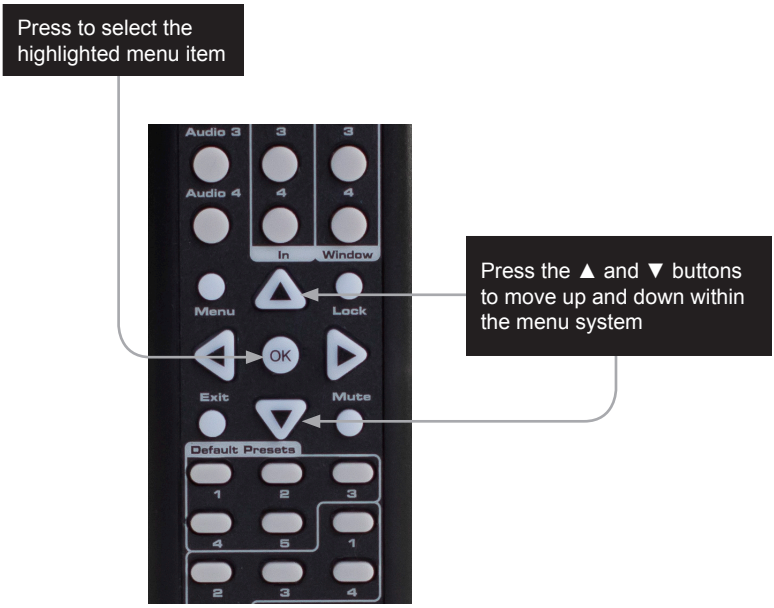
Using the Front Panel Controls

Use the ◄, ►, ▲, and ▼ buttons on the front panel to move around within the menu system. Press the ▲ and ▼ buttons to move up and down. Press the ◄ or ► buttons to change the value of the current selection. Press the **Select** button to make the desired selection. The current selection will be highlighted in green.


Press to select the highlighted menu item
Press the ▲ and ▼ buttons to make a selection within the menu system
Select
4
5
Exit
Menu
IR
Lock
Power
Press the ◄ and ► buttons to change the value of a setting within the menu system

Using the IR Remote Control

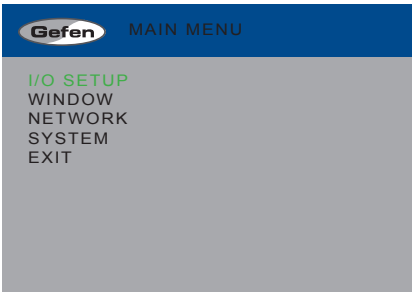
The IR remote control has buttons which represent the controls on the front panel. Use the ◄, ►, ▲, and ▼ buttons to move around within the menu system. Press the ▲ and ▼ buttons to move up and down. Press the ◄ or ► buttons to change the value of the current selection. Press the **OK** button to make the desired selection. The current selection will be highlighted in green.



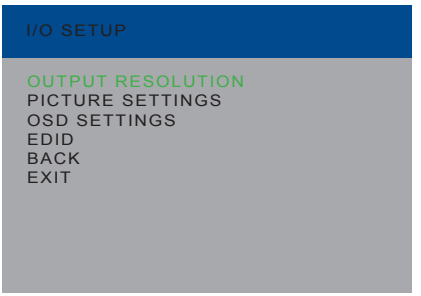
Setting the Output Resolution

NOTE: Before changing this setting, make sure that all connected displays can support the selected output resolution.

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

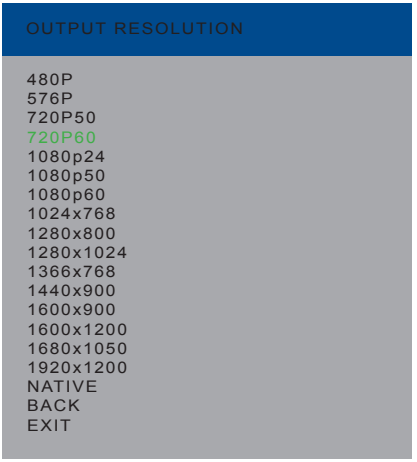


2. Press the **Select** button to display the **I/O Setup** menu. If using the IR remote, press the **OK** button.



3. Press the **Select** button again to display the **Output Resolution** menu. If using the IR remote, press the **OK** button.

5. Use the ▲ or ▼ buttons to highlight the desired output resolution.



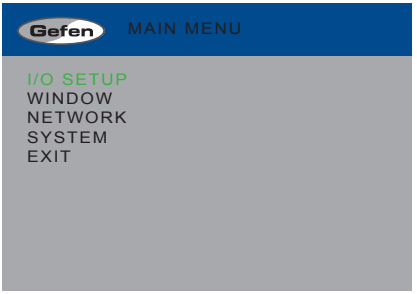
6. Press the **Select** button to apply the highlighted resolution. If using the IR remote, press the **OK** button.

   If the display does not support the selected resolution, use the `#fadefault` command to reset the 4x1 Multiview Seamless Switcher for HDMI.

   See RS-232 and IP Configuration for more information on commands.

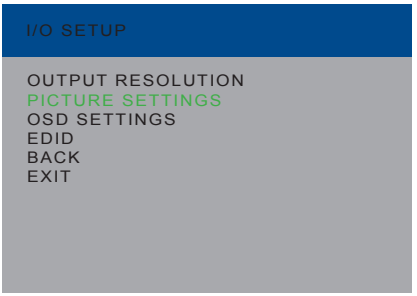
Adjusting the Brightness

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



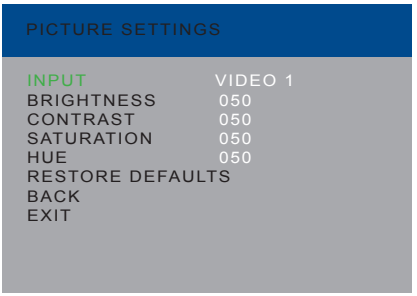
2. Press the **Select** button to display the **Setup Menu**. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.



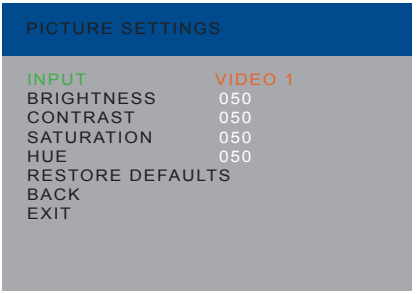
4. Press the **Select** button to display the **Picture Settings** menu. If using the IR remote, press the **OK** button.

5. The **Input** option should be highlighted. If not, use the ▲ or ▼ buttons to highlight it. Each input can have individual contrast settings. Therefore, the input must be selected before making changes to it.



6. Press the **Select** button to select the **Input** option. The currently selected input will be highlighted in orange.

7. Select the desired input using the ◄ or ► buttons.

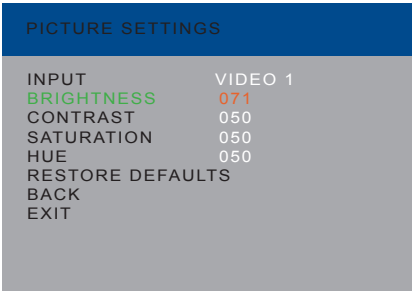


8. Press the **Select** button to accept the current input selection.

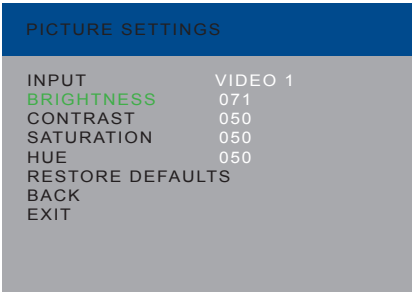
9. Use the ▲ or ▼ buttons to highlight the **Brightness** option.

10. Press the **Select** button to select the **Brightness** option.

11. Change the brightness value using the ◄ or ► buttons.

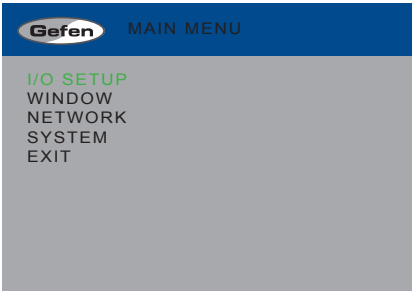


12. Press the **Select** button to accept the change.



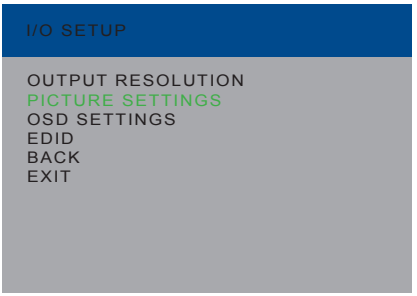
Adjusting the Contrast

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



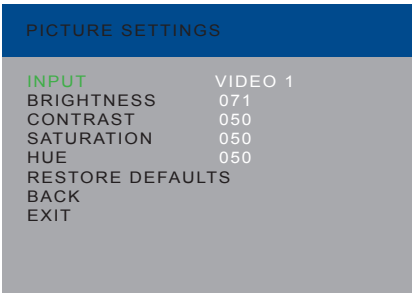
2. Press the **Select** button to display the **Setup Menu**. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.



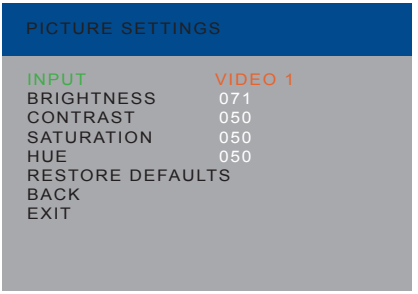
4. Press the **Select** button to display the **Picture Settings** menu. If using the IR remote, press the **OK** button.

5. The **Input** option should be highlighted. If not, use the ▲ or ▼ buttons to highlight it. Each input can have individual contrast settings. Therefore, the input must be selected before making changes to it.



6. Press the **Select** button to select the **Input** option. The currently selected input will be highlighted in orange.

7. Select the desired input using the ◄ or ► buttons.

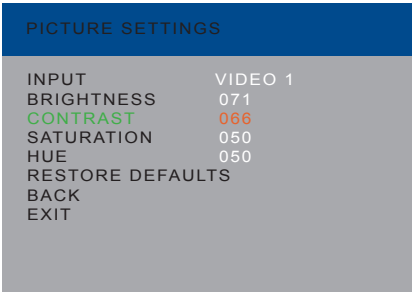


8. Press the **Select** button to accept the current input selection.

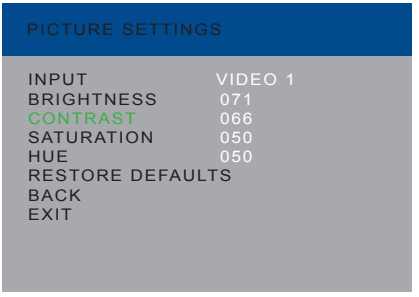
9. Use the ▲ or ▼ buttons to highlight the **Contrast** option.

10. Press the **Select** button to select the **Contrast** option.

11. Change the contrast value using the ◄ or ► buttons.

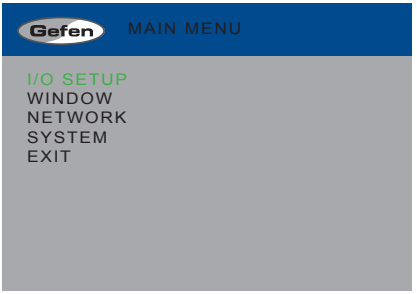


12. Press the **Select** button to accept the change.



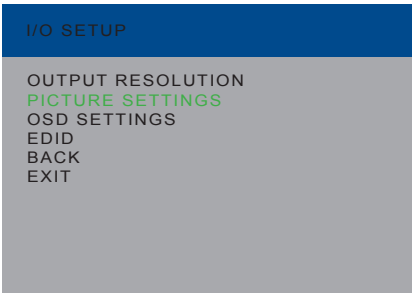
Adjusting the Saturation

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



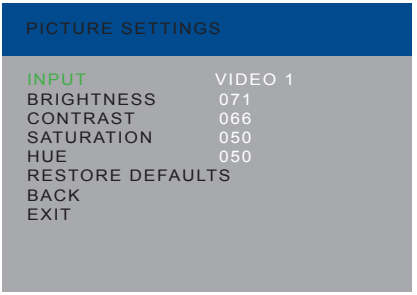
2. Press the **Select** button to display the **Setup Menu**. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.



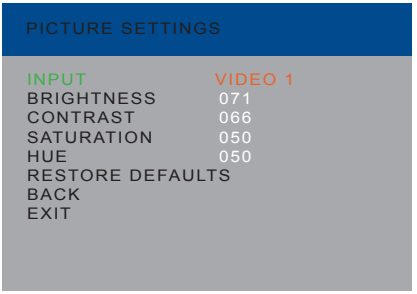
4. Press the **Select** button to display the **Picture Settings** menu. If using the IR remote, press the **OK** button.

5. The **Input** option should be highlighted. If not, use the ▲ or ▼ buttons to highlight it. Each input can have individual contrast settings. Therefore, the input must be selected before making changes to it.



6. Press the **Select** button to select the **Input** option. The currently selected input will be highlighted in orange.

7. Select the desired input using the ◄ or ► buttons.

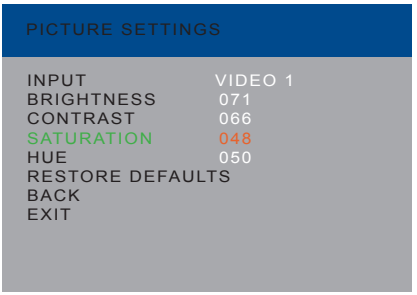


8. Press the **Select** button to accept the current input selection.

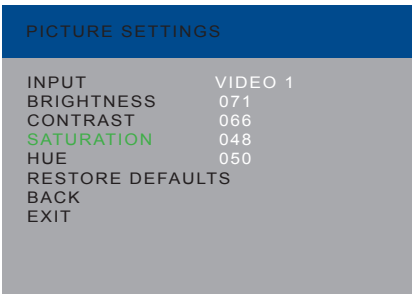
9. Use the ▲ or ▼ buttons to highlight the **Saturation** option.

10. Press the **Select** button to select the **Saturation** option.

11. Change the saturation value using the ◄ or ► buttons.

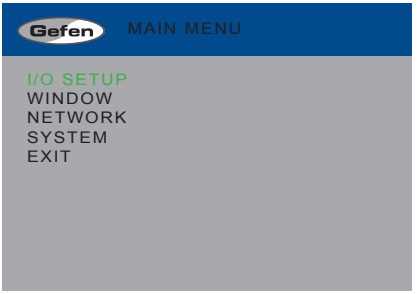


12. Press the **Select** button to accept the change.



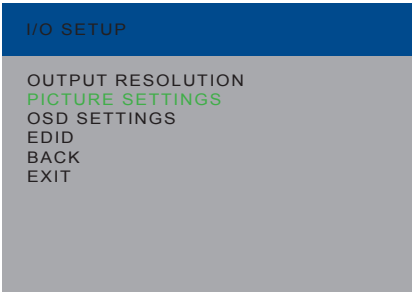
Adjusting the Hue

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



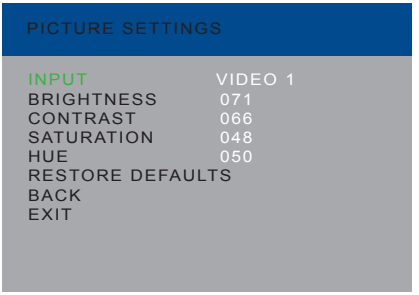
2. Press the **Select** button to display the **Setup Menu**. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.



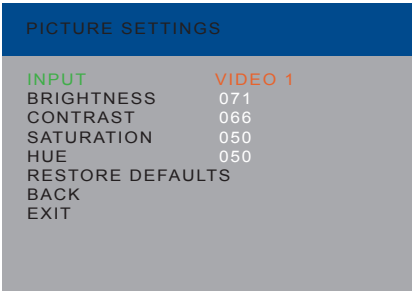
4. Press the **Select** button to display the **Picture Settings** menu. If using the IR remote, press the **OK** button.

5. The **Input** option should be highlighted. If not, use the ▲ or ▼ buttons to highlight it. Each input can have individual contrast settings. Therefore, the input must be selected before making changes to it.



6. Press the **Select** button to select the **Input** option. The currently selected input will be highlighted in orange.

7. Select the desired input using the ◄ or ► buttons.

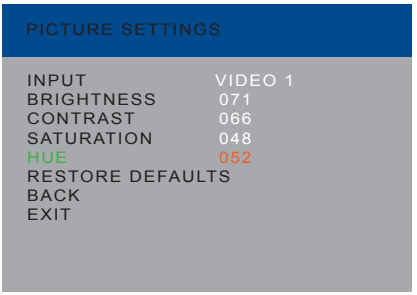


8. Press the **Select** button to accept the current input selection.

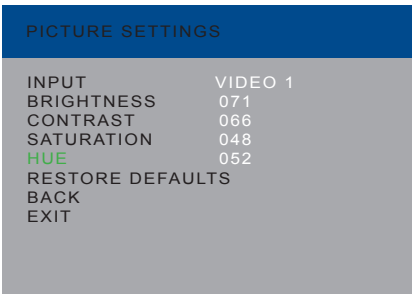
9. Use the ▲ or ▼ buttons to highlight the **Hue** option.

10. Press the **Select** button to select the **Hue** option.

11. Change the hue value using the ◄ or ► buttons.



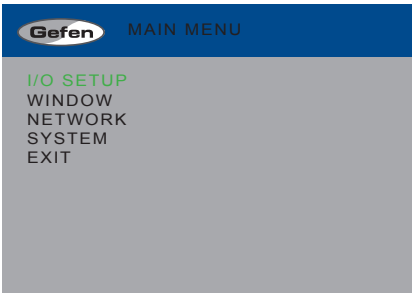
12. Press the **Select** button to accept the change.



OSD Settings

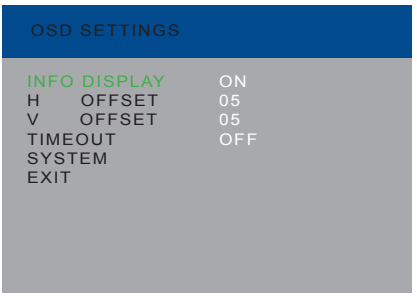
The OSD Settings menu controls how the OSD is displayed.

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



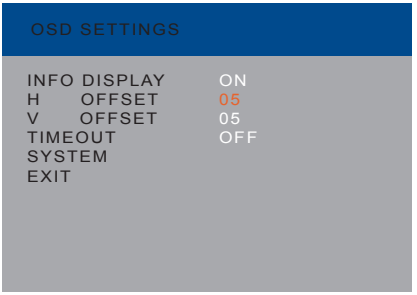
2. Press the **Select** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **OSD Settings**.



4. Once the desired option is highlighted, press the **Select** button to select it. If using the IR remote control, press the **OK** button.

   When an option is selected, its current value will be highlighted in orange.



5. Use the ◄ or ► buttons to change the current value.

6. Press the **Select** button to accept the current changes. If using the IR remote control, press the **OK** button.

Info Display

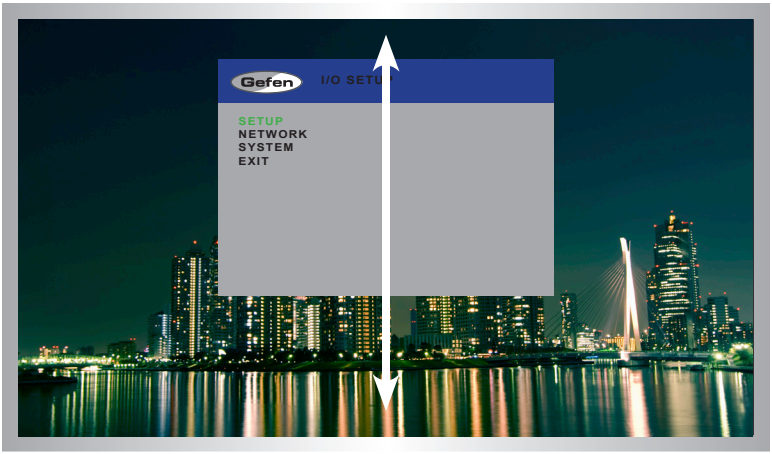
If this option is turned **On**, then the status window is activated.

H Offset

The horizontal offset of the OSD, as it appears on the display.

V Offset

The vertical offset of the OSD, as it appears on the display.

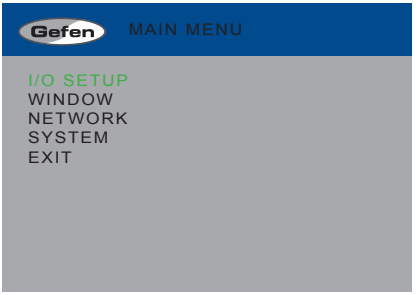


Timeout

Once the **Menu** button is pressed, the OSD will appear. Timeout is the duration, in seconds, when the OSD will be automatically dismissed. If set to **Off**, then the OSD must be hidden manually by pressing the **Menu** button.

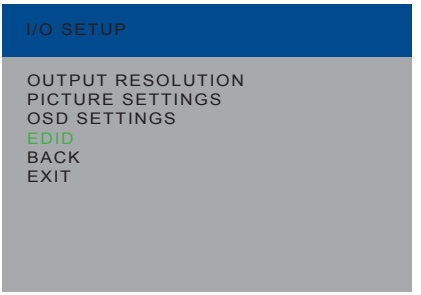
EDID Management

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

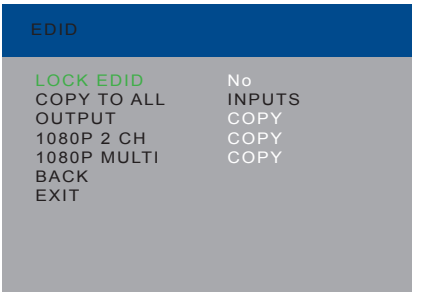


2. Press the **Select** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight the **EDID** option.



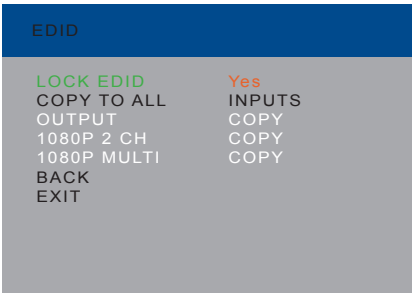
4. Press the **Select** button to display the EDID menu. If using the IR remote, press the **OK** button.



5. Press the **Select** button to select the **Lock EDID** option.

6. Use the ◄ or ► buttons to change the value of the **Lock EDID** option.

7. Press the **Select** button to accept the **Lock EDID** value.



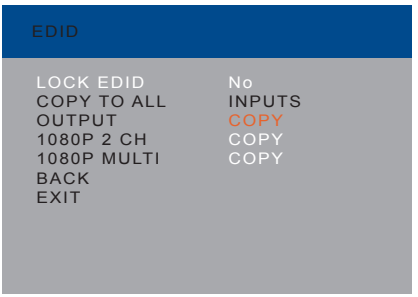
Selecting an EDID

1. Make sure the **Lock EDID** option is set to **No**.

2. Use the ▲ or ▼ buttons to highlight the desired output, containing the EDID to be copied to the input. The **1080p 2 Ch** or **1080p Multi Ch** EDID can also be selected.

   When selecting an EDID, make sure that all displays can support the same audio and video capabilities

3. Press the **Select** button to accept the current output selection. If using the IR remote, press the **OK** button.

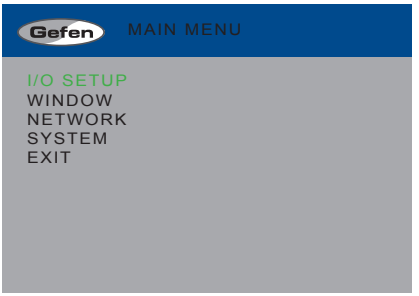


4. The display will flash momentarily. The EDID from the selected output will be copied to the input and will be used by all outputs.

Mirror

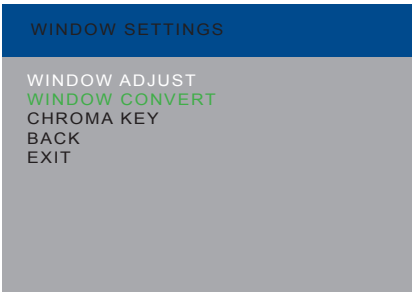
Applies a horizontal transformation (rotated 180° about the y-axis) to window output A.

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



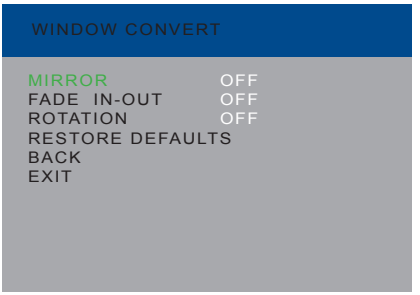
2. Use the ▲ or ▼ buttons to highlight **Window**.

3. Press the **Select** button to display the **Window Settings** menu. If using the IR remote, press the **OK** button.

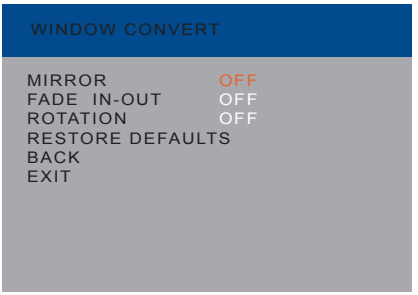


4. Use the ▲ or ▼ buttons to highlight **Window Convert**.

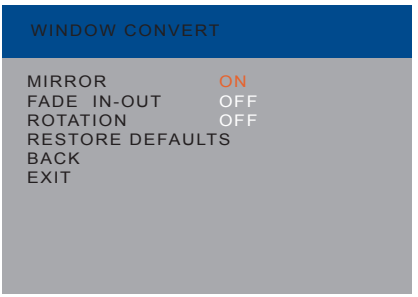
5. Press the **Select** button to display the **Window Convert** menu. If using the IR remote, press the **OK** button.



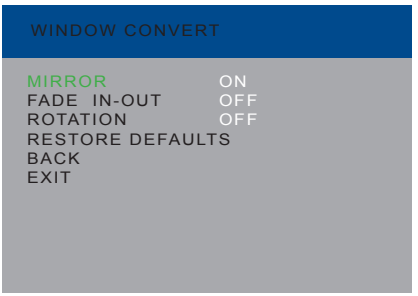
6. Press the **Select** button to select the **Mirror** option. The currently selected value will be highlighted in orange.



7. Use the ◄ or ► buttons to switch mirroring On or Off.



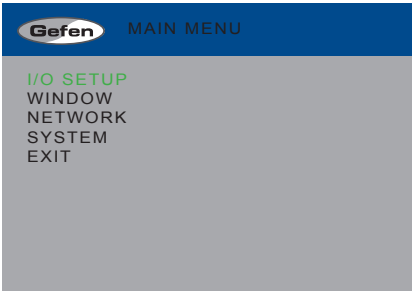
8. Press the **Select** button to accept the current changes. If using the IR remote, press the **OK** button.



Fade In-Out

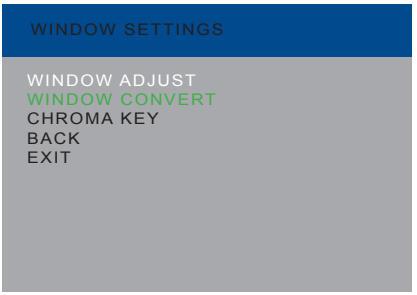
Adds a 1 second transition to Window A and another window, when switching between windows.

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



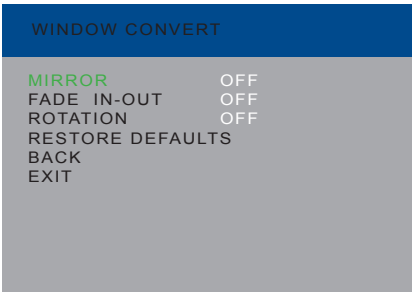
2. Use the ▲ or ▼ buttons to highlight **Window**.

3. Press the **Select** button to display the **Window Settings** menu. If using the IR remote, press the **OK** button.



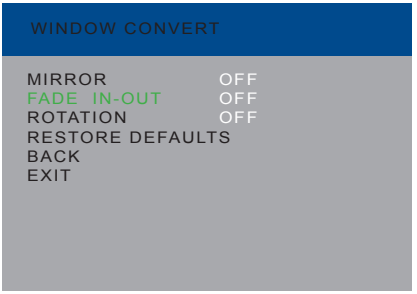
4. Use the ▲ or ▼ buttons to highlight **Window Convert**.

5. Press the **Select** button to display the **Window Convert** menu. If using the IR remote, press the **OK** button.

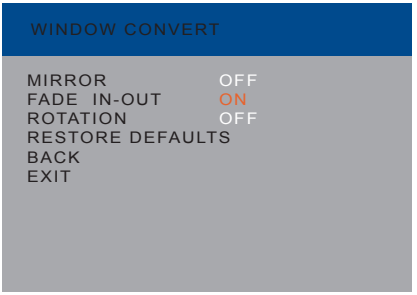


6. Use the ▲ or ▼ buttons to highlight **Fade In-Out**.

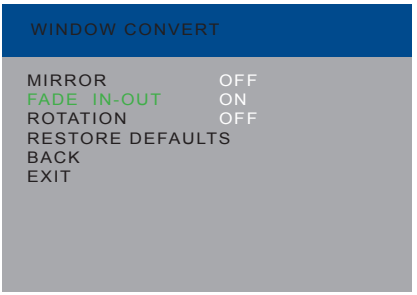
7. Press the **Select** button to select the **Fade In-Out** option. The currently selected value will be highlighted in orange.



8. Use the ◄ or ► buttons to switch the fade feature On or Off.



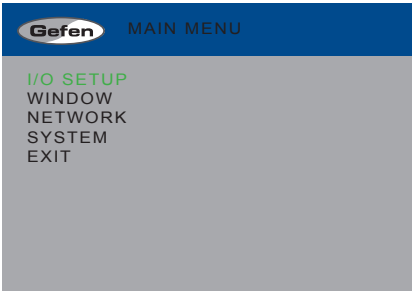
9. Press the **Select** button to accept the current changes. If using the IR remote, press the **OK** button.



Chroma Key

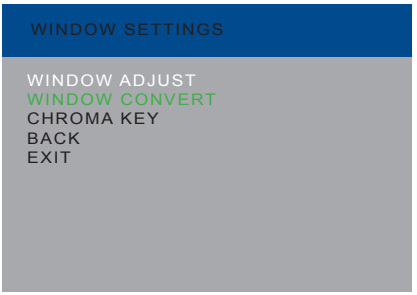
See Using Chroma Key for more information about the chroma key process.

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.



2. Use the ▲ or ▼ buttons to highlight **Window**.

3. Press the **Select** button to display the **Window Settings** menu. If using the IR remote, press the **OK** button.

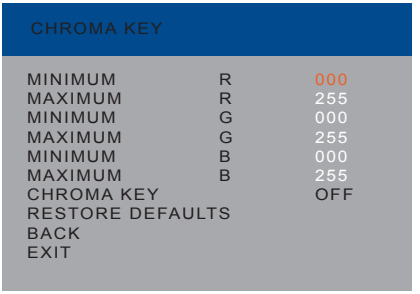


4. Use the ▲ or ▼ buttons to highlight **Chroma Key**.

5. Press the **Select** button to display the **Chroma Key** menu. If using the IR remote, press the **OK** button.

6. Use the ▲ or ▼ buttons to highlight the **Minimum R** option.

7. Press the **Select** button to select the **Minimum R** option. The currently selected value will be highlighted in orange.



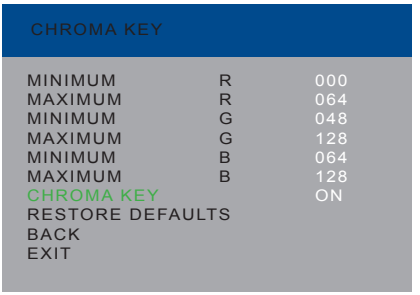
8. Use the ◄ or ► buttons to change the current value.

9. Press the **Select** button to accept the current changes. If using the IR remote, press the **OK** button.

10. Repeat this process for each of the Maximum and Minimum R, G, and B values.

11. Highlight and select the **Chroma Key** option

12. Use the ◄ or ► buttons to turn chroma keying On or Off.

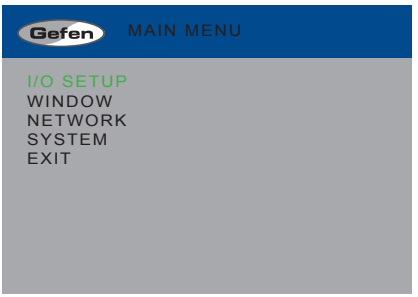


13. Press the **Select** button to accept the current changes. If using the IR remote, press the **OK** button.

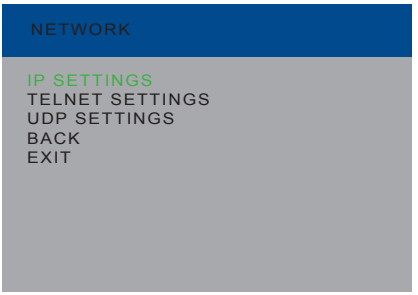
Changing the IP Settings

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

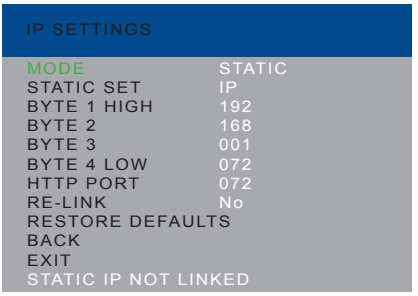
2. Use the ▲ or ▼ buttons to highlight the **Network** option.



3. Press the **Select** button to display the **Network** menu. If using the IR remote, press the **OK** button.



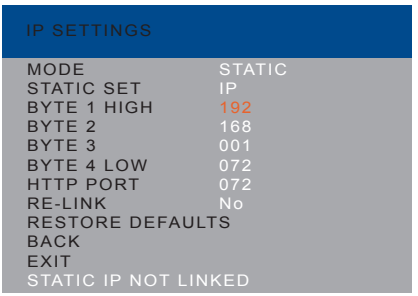
4. Press the **Enter** button again to display the **IP Settings** menu. If using the IR remote, press the **OK** button.



5. Use the ▲ or ▼ buttons to highlight the option to change. The **Mode** option will be highlighted, automatically.

6. Once the desired option is highlighted, press the **Select** button to select it. If using the IR remote control, press the **OK** button.

   When an option is selected, its current value will be highlighted in orange.



7. Use the ◄ or ► buttons to change the current value.

8. Press the **Select** button to accept the current changes. If using the IR remote control, press the **OK** button.

Mode

Set this option to either Static or DHCP. If using the Static option, the IP address must be specified. Use the Byte 1 High , Byte 2, Byte 3, and Byte 4 Low options to set each of the digits in the IP address, subnet mask, and gateway.

Static Set

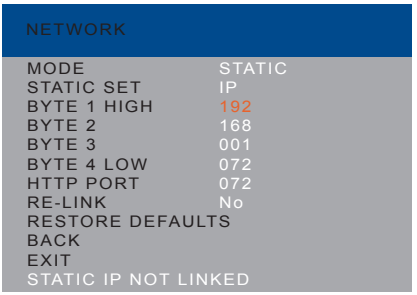
Use this option to switch between the IP address (IP), subnet mask (Mask), and gateway (Gate).

Byte

Use the Byte 1 High, Byte 2, Byte 3, and Byte 4 Low options to set each of the digits in the IP address, subnet mask, and gateway.

HTTP Port

Sets the HTTP listening port for the 4x1 Multiview Seamless Switcher for HDMI.



Re-link

Use this option to attempt to re-link to the network using the current IP settings.

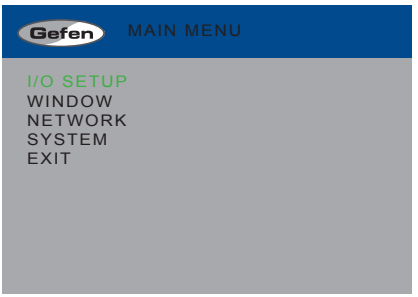
Restore Defaults

This option will reset the default IP settings for the 4x1 Multiview Seamless Switcher for HDMI.

Changing the Telnet Settings

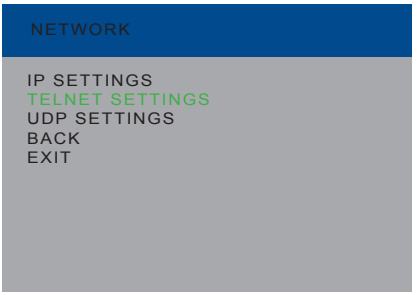
1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

2. Use the ▲ or ▼ buttons to highlight the **Network** option.

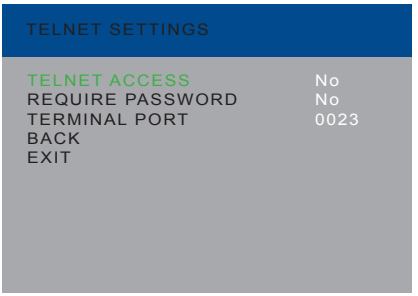


3. Press the **Select** button to display the **Network** menu. If using the IR remote, press the **OK** button.

4. Use the ▲ or ▼ buttons to highlight the **Telnet Settings** option.



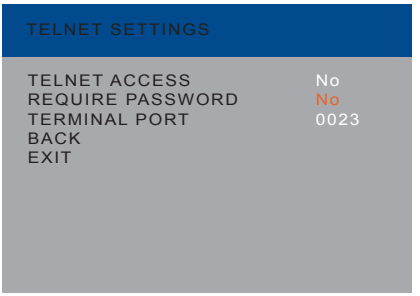
5. Press the **Enter** button again to display the **Telnet Settings** menu. If using the IR remote, press the **OK** button.



5. Use the ▲ or ▼ buttons to highlight the option to change. The **Telnet Access** option will be highlighted, automatically.

6. Once the desired option is highlighted, press the **Select** button to select it. If using the IR remote control, press the **OK** button.

   When an option is selected, its current value will be highlighted in orange.



7. Use the ◄ or ► buttons to change the current value.

8. Press the **Select** button to accept the current changes. If using the IR remote control, press the **OK** button.

Telnet Access

Enables (Yes) or disables (No) Telnet access for the 4x1 Multiview Seamless Switcher for HDMI.

Require Password

Enables (Yes) or disables (No) the password prompt at the beginning of a Telnet session.

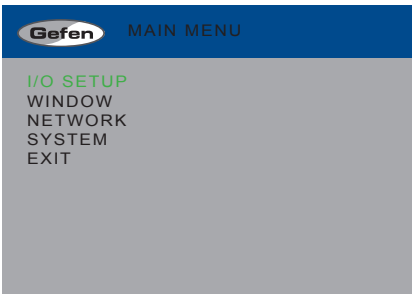
Terminal Port

Sets the Telnet listening port for the 4x1 Multiview Seamless Switcher for HDMI.

Changing the UDP Settings

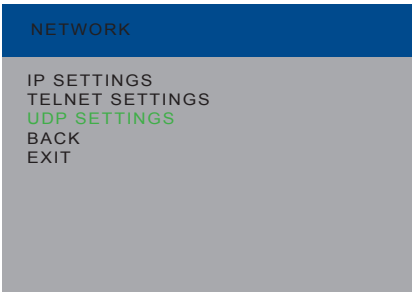
1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

2. Use the ▲ or ▼ buttons to highlight the **Network** option.

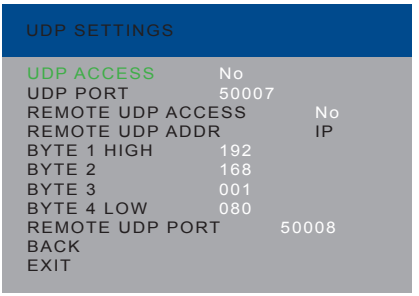


3. Press the **Select** button to display the **Network** menu. If using the IR remote, press the **OK** button.

4. Use the ▲ or ▼ buttons to highlight the **UDP Settings** option.



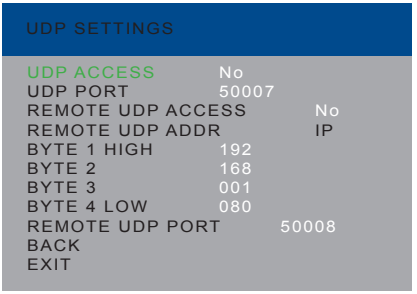
5. Press the **Enter** button again to display the **UDP Settings** menu. If using the IR remote, press the **OK** button.



5. Use the ▲ or ▼ buttons to highlight the option to change. The **UDP Access** option will be highlighted, automatically.

6. Once the desired option is highlighted, press the **Select** button to select it. If using the IR remote control, press the **OK** button.

   When an option is selected, its current value will be highlighted in orange.



7. Use the ◄ or ► buttons to change the current value.

8. Press the **Select** button to accept the current changes. If using the IR remote control, press the **OK** button.

UDP Access

Enables or disables UDP access to the 4x1 Multiview Seamless Switcher for HDMI.

UDP Port

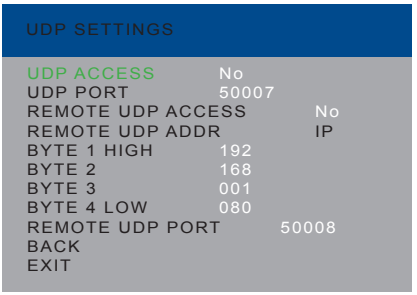
Sets the UDP port for the 4x4 Seamless Matrix for HDMI.

Remote UDP Access

Enables or disables remote UDP access for the 4x1 Multiview Seamless Switcher for HDMI.

Remote UDP Addr

Sets the remote UDP IP address for the 4x1 Multiview Seamless Switcher for HDMI.



Byte

Use the Byte 1 High, Byte 2, Byte 3, and Byte 4 Low options to set the IP address of the digits in the UDP IP address, subnet mask, and gateway.

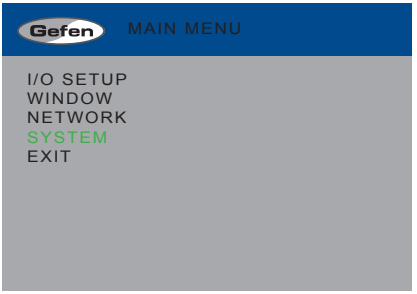
Remote UDP Port

Sets the remote UDP listening port for the 4x1 Multiview Seamless Switcher for HDMI.

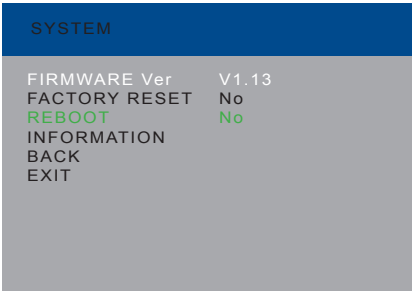
System Settings

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

2. Use the ▲ or ▼ buttons to highlight the **System** option.



3. Press the **Select** button to display the **System** menu. If using the IR remote, press the **OK** button.



4. Use the ▲ or ▼ buttons to highlight the desired option.

5. Press the **Select** button to make the selection. If using the IR remote control, press the **OK** button.

Selecting **Factory Reset** will reset the 4x1 Multiview Seamless Switcher to factory-default settings

Selecting **Reboot** will reboot the 4x1 Multiview Seamless Switcher. This option is the same as disconnecting and reconnecting the AC power cord, on the back of the switcher.

Multiview Seamless Switcher

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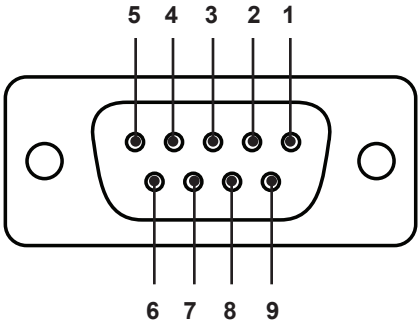
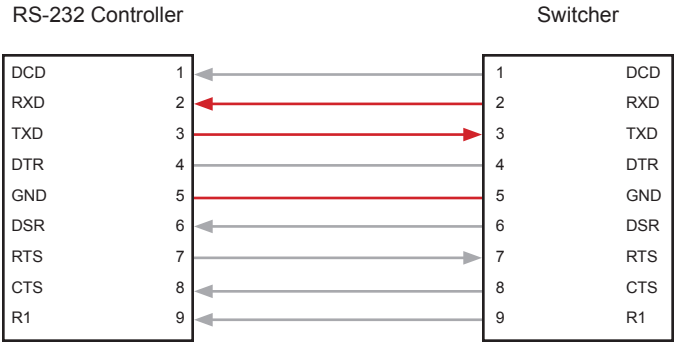
RS-232 and IP Configuration

RS-232 Interface





Only TXD, RXD, and GND pins are used.

RS-232 Settings

Description	Setting
Baud rate	19200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

IMPORTANT: When sending Telnet or RS-232 commands, a carriage return (0d) and a line feed (0a) must be included at the end of the command.

IP / UDP Configuration

The 4x1 Multiview Seamless Switcher for HDMI supports IP-based control using Telnet, UDP, or the built-in Web-based GUI. To set up IP control, the network settings for the 4x1 Multiview Seamless Switcher for HDMI must be configured via RS-232. The default network settings for the 4x1 Multiview Seamless Switcher are as follows:

Description	IP Address / Port	Description	IP Address / Port
IP Address	192.168.1.72	UDP Port	23
Subnet	255.255.255.0	Local UDP Port	50007
Gateway	192.168.1.254	Remote UDP IP	192.168.1.255
HTTP Port	80	Remote UDP Port	50008

1. Connect an RS-232 cable from the PC to the 4x1 Multiview Seamless Switcher for HDMI. Also make sure that an Ethernet cable is connected between the 4x1 Multiview Seamless Switcher and the network.
2. Launch a terminal emulation program (e.g. HyperTerminal) and use the RS-232 settings listed on the previous page.

> **NOTE:** Depending upon the network, all related IP, Telnet, and UDP settings will need to be assigned. Consult your network administrator to obtain the proper settings.

3. Set the IP address for the 4x1 Multiview Seamless Switcher using the `#set_ipadd` command.
4. Set the subnet mask using the `#set_netmask` command.
5. Set the gateway (router) IP address using the `#set_gateway` command.
6. Set the Telnet listening port using the `#set_telnet_port` command.
7. Set the HTTP listening port using the `#set_http_port` command.
8. Set the UDP remote IP address for the switcher using the `#set_udp_remote_ip` command.
9. Set the UDP listening port for the switcher using the `#set_udp_port` command.
10. Set the UDP remote port for the switcher using the `#set_udp_remote_port` command.
11. Reboot the switcher to apply all changes, then type the IP address that was specified in step 3, in a Web browser to access the Web GUI. Use the same IP address to Telnet to the switcher.

Commands

Command	Description
#chromakey	Enables or disables chroma-keying
#chromakey_color	*This command will be available in a future release of the firmware*
#display_telnet_welcome	Enables or disables the Telnet welcome message
#fade	Enable or disable fade effect
#fadefault	Resets the current routing and masking state to factory-default settings
#help	Displays the list of available commands
#lock_aspect	Locks the aspect ratio of all inputs
#lock_edid	Locks the local EDID when the switcher is power-cycled
#mask	Masks the specified outputs
#mirror	Enables or disables window mirroring
#mute	Enables or disables muting on all outputs
#power	Toggles the power on the switcher
#reboot	Reboots the switcher
#recall_preset	Loads the specified routing preset into memory
#rotate	Rotates the video signal
#save_preset	Saves a routing preset to memory
#set_audio	Sets the audio input
#set_bank_name	Assigns a name to the specified bank
#set_brightness	Sets the brightness level for all outputs
#set_contrast	Sets the contrast level for all outputs
#set_edid	Assigns the specified EDID to an input or bank
#set_gateway	Sets the gateway address
#set_hdcp	Enables or disables HDCP detection
#set_hposition	Sets the horizontal position of the specified window
#set_hsize	Sets the horizontal size of the specified window
#set_http_port	Sets the HTTP listening port
#set_hue	Sets the hue for all outputs
#set_ipadd	Sets the IP address
#set_ipmode	Sets the IP mode (DHCP or static)
#set_ir	Sets the IR channel of the switcher
#set_netmask	Sets the subnet mask
#set_osd	Enables or disables the OSD (On-Screen Display)
#set_output	Sets the output resolution
#set_preset_name	Assigns a name to the specified preset

Command	Description
#set_priority	Sets the priority for the specified window
#set_saturation	Set the saturation for the specified output
#set_tcp_user	*This command will be available in a future release of the firmware*
#set_telnet_pass	Sets the Telnet password
#set_telnet_port	Sets the Telnet listening port
#set_udp_port	Sets the local UDP listening port
#set_udp_remote_ip	Sets the remote UDP IP address
#set_udp_remote_port	Sets the remote UDP port
#set_vposition	Sets the vertical position of the specified window
#set_vsize	Sets the vertical size of the specified window
#set_webui_ad_pass	Sets the Administrator password for the Web interface
#set_webui_op_pass	Sets the Operator password for the Web interface
#show_bank_name	Displays the name of the specified EDID bank
#show_brightness	Displays the brightness value for all outputs
#show_chromakey_color	Displays the minimum or maximum value of the specified chroma key color component
#show_contrast	Displays the contrast value for all outputs
#show_gateway	Displays the IP address of the (router) gateway
#show_hdcp	Displays the HDCP status of the specified input
#show_http_port	Displays the Web server listening port
#show_hue	Displays the hue value for all outputs
#show_ip	Displays the current IP address of the switcher
#show_ipconfig	Displays the current TCP/IP settings of the switcher
#show_ipmode	Displays the current IP mode (DHCP or static)
#show_ir	Displays the current IR channel of the switcher
#show_mac_addr	Displays the MAC address of the switcher
#show_netmask	Displays the current subnet mask
#show_osd	Enables or disables the OSD (On-Screen Display)
#show_output	Displays the output resolution
#show_power	Displays the power state of the switcher
#show_preset_name	Displays the name of the specified preset
#show_saturation	Displays the saturation value for all outputs
#show_tcp_access	Displays the current TCP access state
#show_telnet_port	Displays the current Telnet port
#show_udp_port	Displays the current UDP serial port

Command	Description
#show_udp_remote_ip	Displays the current UDP remote IP address
#show_udp_remote_port	Displays the current UDP remote port
#show_ver_data	Displays the current hardware and software version
#unmask	Disables masking on the specified output
#use_tcp_access	Enables or disables Telnet access
#use_telnet_pass	Forces password credentials for each Telnet session
#use_udp_access	Enables or disables UDP access
m	Displays the switcher routing status
r	Routes the specified input to the output
s	Routes the specified input to all outputs

#chromakey

The `#chromakey` command enables or disables chroma-keying. This command is only applicable when viewing a single input (full screen). Executing this command when viewing multiple windows will return an error.

Syntax

```
#chromakey param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable
1	Enable

Examples

```
#chromakey 1
CHROMAKEY EFFECT ON
```

If command is run when viewing multiple windows:

```
#chromakey 1
CURRENT ROUTING STATE IS WRONG!
```

#chromakey_color

This command will be available in a future release of the firmware.

#display_telnet_welcome

The `#display_telnet_welcome` command enables or disables the Telnet welcome message during a Telnet session.

Syntax

```
#display_telnet_welcome param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable welcome message
1	Enable welcome message

Example

```
#display_telnet_welcome 1

TELNET WELCOME SCREEN IS ENABLED
```

When enabled and a Telnet session has been started, the following will appear:

```
Welcome to EXT-HD-MVSL-441 TELNET
```

#fade

The #fade command enables or disables fade effects.

Syntax

```
#fade param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable fade effects
1	Enable fade effects

Example

```
#fade 1
FADE EFFECT ON
```

#fadefault

The #fadefault command resets the 4x1 Multiview Seamless Switcher to factory-default settings. Outputs are unmasked and all IP and UDP settings are reset to default settings.

Syntax

#fadefault

Parameters

None

Example

#fadefault

#help

The `#help` command displays the list of available RS-232 / Telnet commands. Help on a specific command can be displayed when using `param1`.

Syntax

```
#help param1
```

Parameters

param1	Command name (optional)	[STRING]

Example

```
#help #sipadd
SET IP ADDRESS
#SIPADD PARAM1
PARAM1 = XXX.XXX.XXX.XXX
WHERE XXX: 0 - 255
```

#lock_aspect

The `#lock_aspect` command locks or unlocks the aspect ratio of all inputs. This command is only applicable when viewing multiple input (multiple windows). Executing this command when viewing a single window will return an error.

Syntax

```
#lock_aspect param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Unlock
1	Lock

Example

```
#lock_aspect 1
ASPECT RATIO LOCKED
```

If command is run when viewing a single window:

```
#lock_aspect 1
CURRENT ROUTING STATE IS WRONG!
```

#lock_edid

The `#lock_edid` command secures the Local EDID by disabling the automatic loading of the downstream EDID when the switcher is powered.

Syntax

```
#lock_edid param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Unlock EDID
1	Lock EDID

Example

```
#lock_edid 1
EDID IS LOCKED
```

#mask

The #mask command masks the video on the specified output(s). Use the #unmask command to disable output masking. If *param1* = 0, then all outputs are masked.

Syntax

```
#mask param1
```

Parameters

param1	Output	[0 ... 4]

Examples

```
#mask 1
OUTPUT A IS MASKED

#mask 0
ALL OUTPUTS ARE MASKED
```

#mirror

The `#mirror` command enables or disables window mirroring. This command applies a horizontal transformation (rotated 180° about the y-axis) to window output A.

Syntax

```
#mirror param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable
1	Enable

Example

```
#mirror 1
MIRROR EFFECT ON
```

#mute

The #mute command enables or disables audio muting on all outputs.

Syntax

```
#mute param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Unlock
1	Lock

Example

```
#mute 1
AUDIO IS MUTED
```

#power

The `#power` command toggles power on the 4x1 Multiview Seamless Switcher.

Syntax

```
#power param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Off
1	On

Examples

```
#power 0
POWER IS OFF

#power 1
POWER IS ON
```

#reboot

The #reboot command reboots the 4x1 Multiview Seamless Switcher. Executing this command is the equivalent of disconnecting and reconnecting the AC power cord, on the back of the switcher. The 4x1 Multiview Seamless Switcher must be rebooted after changing any of the IP settings.

Syntax

```
#reboot
```

Parameters

None

Example

```
#reboot
DEVICE HAS BEEN REBOOTED
IP: 192.168.5.155
Netmask: 255.255.255.0
Gateway: 192.168.5.254
Ethernet Cable Plug in!!
```

#recall_preset

The `#recall_preset` command loads the routing preset.

Syntax

```
#recall_preset param1
```

Parameters

param1	Preset	[1 ... 10]

Example

```
#recall_preset 2
INPUT 4 IS ROUTED TO WINDOW OUTPUT A
RECALL ROUTING STATE PRESET 2
```

#rotate

The `#rotate` command will be available in a future release of firmware.

#save_preset

The `#save_preset` command saves the current routing state to a specified preset.

Syntax

```
#save_preset param1
```

Parameters

param1	Preset	[1 ... 10]

Example

```
#save_preset 1
CURRENT ROUTING STATE IS SAVED TO PRESET 1
```

#set_audio

The `#set_audio` command sets the audio input.

Syntax

```
#set_audio param1
```

Parameters

param1	Input	[1 ... 4]

Example

```
#set_audio 1
AUDIO INPUT 1 IS SELECTED
```

#set_bank_name

The `#set_bank_name` command names the specified bank.

Syntax

```
#set_bank_name param1 param2
```

Parameters

param1	Bank	[1 ... 8]
param2	Name	[STRING]

Example

```
#set_bank_name 5 Dell_24
Dell_24 NAME IS ASSIGNED TO BANK 5
```

#save_preset

The `#save_preset` command saves the current routing state to a specified preset.

Syntax

```
#save_preset param1
```

Parameters

param1	Preset	[1 ... 10]

Example

```
#save_preset 1
CURRENT ROUTING STATE IS SAVED TO PRESET 1
```

#set_brightness

The #set_brightness command sets the brightness level of the video signal on all outputs.

Syntax

```
#set_brightness param1
```

Parameters

param1	Level	[0 ... 100]

Examples

```
#set_brightness 65
OUTPUT 1 IS SET TO BRIGHTNESS VALUE : 65
```

#set_contrast

The #set_contrast command sets the contrast level of the video signal on the specified output.

Syntax

```
#set_contrast param1 param2
```

Parameters

param1	Level	[0 ... 100]

Examples

```
#set_contrast 74
OUT A IS SET TO CONTRAST VALUE : 74
```

#set_edid

The `#set_edid` command sets the specified EDID type to an input or bank.

Syntax

```
#set_edid param1 param2 param3 param4
```

Parameters

param1 Source [STRING]

Source	Description
`int`	Uses default (Internal) EDID
`bank`	Uses EDID bank
`output`	Uses EDID on Output (sink)

param2 Source [1 ... 8]

Source	Description
`1 ... 4`	1 = 720p / 2CH 2 = 720p / Multichannel 3 = 1080p / 2CH 4 = 1080p / Multichannel
`1 ... 8`	EDID bank
`1 ... 4`	Output

param3 Target [STRING]

Target	Description
`input`	Specifies an input
`bank`	Specifies an EDID bank

param4 Target [1 ... 8]

Value	Description
`1 ... 4`	Input
`1 ... 8`	EDID bank

(continued on next page)

Examples

```
#set_edid int 2 input 4
INTERNAL EDID 2 IS SAVED TO INPUT4

#set_edid bank 3 bank 5
BANK EDID 3 IS SAVED TO BANK5
```

#set_gateway

The #set_gateway command sets the gateway address. The gateway must be typed using dot-decimal notation. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command. The default gateway is 192.168.1.1.

Syntax

```
#set_gateway param1
```

Parameters

param1	Gateway

Example

```
#set_gateway 192.168.1.5
GATEWAY : 192.168.1.11
```

#set_hdcp

The #set_hdcp command disables or enables HDCP pass-through on the specified input. If *param1* = 0, then all inputs are affected.

Syntax

```
#set_hdcp param1 param2
```

Parameters

param1	Input	[1 ... 4]
param2	Value	[0 ... 1]

Value	Description
0	Disable
1	Enable

Examples

```
#set_hdcp 1 1
HDCP PASS THRU ENABLED ON INPUT 1


#set_hdcp 0
HDCP PASS THRU DISABLED FOR ALL INPUTS
```

#set_hposition

The `#set_hposition` command sets the horizontal position of the specified window. *param2* is the number of horizontal pixels for the resolution of the specified window. This command is only applicable when viewing multiple input (multiple windows). Executing this command when viewing a single window will return an error.

Syntax

```
#set_hposition param1 param2
```

Parameters

param1	Window	[1 ... 4]
param2	Horizontal Pixels (active)	[0 ... n]

Example

```
#set_hposition 1 300
SET HORIZONTAL POSITION VALUE TO 300 PIXELS FOR WINDOW 1
```

If command is run when viewing a single window:

```
#set_hposition 1 300
CURRENT ROUTING STATE IS WRONG!
```

#set_hsize

The #set_hsize command sets the horizontal size of the specified window. *param2* is the number of horizontal pixels for the resolution of the specified window. This command is only applicable when viewing multiple input (multiple windows). Executing this command when viewing a single window will return an error.

Syntax

```
#set_hsize param1 param2
```

Parameters

param1	Window	[1 ... 4]
param2	Horizontal Pixels (active)	[0 ... n]

Example

```
#set_hsize 1 600
SET HORIZONTAL STRETCH VALUE TO 600 PIXELS FOR WINDOW 1
```

If command is run when viewing a single window:

```
#set_hsize 1 600
CURRENT ROUTING STATE IS WRONG!
```

#set_http_port

The #set_http_port command specifies the Web server listening port. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command. The default port setting is 80. Use the #show_http_port command to display the current HTTP listening port.

Syntax

```
#set_http_port param1
```

Parameters

param1	Port	[1 ... 1024]

Example

```
#set_http_port 82
HTTP PORT 82 IS SET
```

#set_hue

The #set_hue command sets the hue for all outputs.

Syntax

```
#set_hue param1
```

Parameters

param1	Value	[0 ... 100]

Example

```
#set_hue 30
OUT A SET TO HUE VALUE : 30
```

#set_ipadd

The #set_ipadd command sets the IP address of the 4x1 Multiview Seamless Switcher. The IP address must be entered using dot-decimal notation. The switcher must be rebooted after executing this command. The default IP address is 192.168.1.72. Use the #show_ipconfig or #show_ip command to display the current IP address of the 4x1 Multiview Seamless Switcher.

Syntax

```
#set_ipadd param1
```

Parameters

param1	IP address

Example

```
#set_ipadd 192.168.1.190
IP ADDRESS : 192.168.1.190
```

#set_ipmode

The #set_ipmode command sets the IP mode to DHCP or static. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command.

Syntax

```
#set_ipmode param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Static
1	DHCP

Example

```
#set_ipmode 1
IP MODE SET TO STATIC
PLEASE REBOOT TO ACTIVATE!!!
```

#set_ir

The #set_ir command will be available in a future release of firmware.

#set_netmask

The #set_netmask command sets the subnet mask. The subnet mask must be entered using dot-decimal notation. The switcher must be rebooted after executing this command. The default subnet mask is 255.255.255.0. Use the #show_netmask or #show_ipconfig command to display the current subnet mask of the switcher.

Syntax

```
#set_netmask param1
```

Parameters

param1	Subnet mask

Example

```
#set_netmask 255.255.255.0
NETMASK : 255.255.255.0
```

#set_osd

The #set_osd command enables or disables the OSD (On-Screen Display). The OSD is enabled, by default.

Syntax

```
#set_osd param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable
1	Enable

Example

```
#set_osd 0
OSD IS SET TO OFF
```

#set_output

The `#set_output` command sets the output resolution. The specified output resolution is applied to all outputs.

Syntax

```
#set_output param1
```

Parameters

param1 Value [0 ... 16]

Value	Description
0	480p
1	576p
2	720p @ 50 Hz
3	720p @ 60 Hz
4	1080p @ 24 Hz
5	1080p @ 50 Hz
6	1080p @ 60 Hz
7	1024 x 768
8	1280 x 800
9	1280 x 1024
10	1366 x 768
11	1440 x 900
12	1600 x 900
13	1600 x 1200
14	1680 x 1050
15	1920 x 1200
16	Native

Example

```
#set_output 3
OUTPUT RESOLUTION IS SET TO : 720p60
```

#set_preset_name

The #set_preset_name command assigns a name to the specified preset. The name of the preset is limited to 8 characters. Names longer than 8 characters will be truncated. To display the name of a preset, use the #show_preset_name command. Presets 1 through 5 cannot be changed.

Syntax

```
#set_preset_name param1 param2
```

Parameters

param1	Preset	[6 ... 20]
param2	Name	[STRING]

Example

```
#set_preset_name 8 MyWinCfg
MyWinCfg NAME IS ASSIGNED TO PRESET 8
```

#set_priority

The `#set_priority` command sets the priority for the specified window. Windows assigned with a priority of 1 will appear on top of all other windows. Windows with a priority of 4 will be displayed on the bottom of all other windows. See Window Priority for more information.

Syntax

```
#set_priority param1 param2
```

Parameters

param1	Window	[1 ... 4]
param2	Priority	[1 ... 4]

Example

```
#set_priority 2 1
WINDOW 2 SET TO PRIORITY 1
```

#set_saturation

The `#set_saturation` command sets the color saturation level for all outputs.

Syntax

```
#set_saturation param1
```

Parameters

param1	Level	[0 ... 100]

Example

```
#set_saturation 65
OUT A SET TO SATURATION VALUE : 65
```

#set_tcp_user

This command will be available in a future release of firmware.

#set_telnet_pass

The #set_telnet_pass command sets the Telnet password. The password cannot exceed 10 characters in length.

Syntax

```
#set_telnet_pass param1
```

Parameters

param1	Password	[STRING]

Example

```
#set_telnet_pass Fl0ti11a
TELNET INTERFACE PASSWORD IS SET Fl0ti11a
```

#set_telnet_port

The #set_telnet_port command sets the Telnet listening port. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command. The default port setting is 23. Use the #show_telnet_port command to display the current Telnet listening port.

Syntax

```
#set_telnet_port param1
```

Parameters

param1	Port	[1 ... 1024]

Example

```
#set_telnet_port 24
TELNET PORT 24 IS SET
```

#set_udp_port

The `#set_udp_port` command sets the UDP listening port.

Syntax

```
#set_udp_port param1
```

Parameters

param1	Port	[1 ... 1024]

Example

```
#set_udp_port 1002
UDP COMMUNICATION PORT 1002 IS SET
PLEASE REBOOT THE UNITS
```

#set_udp_remote_ip

The #set_udp_remote_ip command sets the remote UDP IP address. The IP address must be specified using dot-decimal notation. The default UDP remote IP address is 192.168.1.255. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command.

Syntax

```
#set_udp_remote_ip param1
```

Parameters

param1	UDP address

Example

```
#set_udp_remote_ip 192.168.1.227
UDP REMOTE IP ADDRESS : 192.168.1.227
```

#set_udp_remote_port

The `#set_udp_remote_port` command sets the remote UDP listening port. The default remote UDP listening port is `50008`. The 4x1 Multiview Seamless Switcher must be rebooted after executing this command.

Syntax

```
#set_udp_remote_port param1
```

Parameters

param1	Port	[0 ... 65535]

Example

```
#set_udp_remote_port 50008

REMOTE UDP COMMUNICATION PORT 50008 IS SET.
```

#set_vposition

The `#set_vposition` command sets the vertical position of the specified window. *param2* is the number of vertical pixels for the resolution of the specified window. This command is only applicable when viewing multiple windows. Executing this command when viewing a single window will return an error.

Syntax

```
#set_vposition param1 param2
```

Parameters

param1	Window	[1 ... 4]
param2	Vertical Pixels (active)	[0 ... n]

Example

```
#set_vposition 2 100
SET VERTICAL POSITION VALUE TO 100 PIXELS FOR WINDOW 2
```

If command is executed when viewing a single window:

```
#set_vposition 2 100
CURRENT ROUTING STATE IS WRONG!
```

#set_vsize

The #set_vsize command sets the vertical size of the specified window. *param2* is the number of vertical pixels for the resolution of the specified window. This command is only applicable when viewing multiple windows. Executing this command when viewing a single window will return an error.

Syntax

```
#set_vsize param1 param2
```

Parameters

param1	Window	[1 ... 4]
param2	Vertical Pixels (active)	[0 ... n]

Example

```
#set_vsize 3 250
SET VERTICAL STRETCH VALUE TO 250 PIXELS FOR WINDOW 3
```

If command is executed when viewing a single window:

```
#set_vsize 3 250
SET VERTICAL STRETCH VALUE TO 250 PIXELS FOR WINDOW 3
```

#set_webui_ad_pass

The `#set_webui_ad_pass` command sets the Administrator password for the Web GUI. The password is case-sensitive and cannot exceed 8 characters in length. The default password is `Admin`.

Syntax

```
#set_webui_ad_pass param1
```

Parameters

param1	Password

Example

```
#set_webui_ad_pass bossman
WEB UI ADMINISTRATOR PASSWORD IS SET bossman
```

#set_webui_op_pass

The #set_webui_ad_pass command sets the Operator password for the Web GUI. The default password is Admin.

Syntax

```
#set_webui_op_pass param1
```

Parameters

param1	Password	

Example

```
#set_webui_op_pass minion
WEB UI OPERATOR PASSWORD IS SET minion
```

#show_bank_name

The #show_bank_name command displays the name of the specified EDID bank. To assign a name to an EDID bank, use the #set_bank_name command.

Syntax

```
#show_bank_name param1
```

Parameters

param1	Bank	[1 ... 8]

Example

```
#show_bank_name 5
THE NAME FOR BANK5 IS : Dell24
```

#show_brightness

The #show_brightness command displays the brightness level for the specified window.

Syntax

```
#show_brightness param1
```

Parameters

None

Example

```
#show_brightness 2
INPUT 2 IS SET TO BRIGHTNESS VALUE 50
```

#show_chromakey_color

The `#show_chromakey_color` command displays the minimum or maximum value of the specified chroma key color component.

Syntax

```
#show_chromakey_color param1 param2
```

Parameters

param1 Color channel [CHAR]

Value	Description
`r`	Red channel
`g`	Green channel
`b`	Blue channel

param2 Color range [STRING]

Value	Description
`min`	Minimum value
`max`	Maximum value

Example

```
#show_chromakey_color r max
CHROMA KEY VALUE FOR R MAX SET TO 255
```

#show_contrast

The #show_contrast command displays the contrast level for all outputs.

Syntax

#show_contrast

Parameters

None

Example

```
#show_contrast
OUT A CONTRAST VALUE : 74
```

#show_gateway

The #show_gateway command displays the current gateway address of the 4x1 Multiview Seamless Switcher. Use the #set_gateway command to set the gateway address.

Syntax:

#show_gateway

Parameters:

None

Example:

```
#show_gateway
GATEWAY : 192.168.1.11
```

#show_hdcp

The `#show_hdcp` command displays the current HDCP setting for inputs or outputs.

Syntax

```
#show_hdcp param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Query input signal
1	Query output signal

Examples

```
#show_hdcp 0
HDCP INPUT IS SET TO ACCEPT

#show_hdcp 1
HDCP OUTPUT IS SET TO FOLLOW INPUT
```

#show_http_port

The #show_http_port command displays the current HTTP listening port of the 4x1 Multiview Seamless Switcher. Use the #set_http_port command to set the HTTP listening port.

Syntax

```
#show_http_port
```

Parameters

None

Examples

```
#show_http_port
HTTP PORT IS 80
```

#show_hue

The #show_hue command displays the current hue setting for all outputs.

Syntax

```
#show_hue
```

Parameters

param1	Output

Example

```
#show_hue
OUT A HUE VALUE : 30
```

#show_ip

The #show_ip command displays the current IP address of the 4x1 Multiview Seamless Switcher.

Syntax

#show_ip

Parameters

None

Example

```
#show_ip
IP ADDRESS : 192.168.1.190
```

#show_ipconfig

The #show_ipconfig command displays the current TCP/IP settings.

Syntax

```
#show_ipconfig
```

Parameters

None

Example

```
#show_ipconfig
IP CONFIGURATION IS:
(STATIC)
     IP : 192.168.1.190
NETMASK : 255.255.255.0
GATEWAY : 192.168.1.11
MAC ADDRESS = 00:1c:91:03:b0:00
```

#show_ipmode

The #show_ipmode command displays the current IP mode. To set the IP mode, use the #show_ipmode command.

Syntax

```
#show_ipmode
```

Parameters

None

Example

```
#show_ipmode
IP MODE SET TO STATIC
```

#show_ir

The #show_ir command displays the IR channel of the switcher.

Syntax

```
#show_ir
```

Parameters

None

Example

```
#show_ir
IR CHANNEL IS SET TO 0
```

#show_mac_addr

The #show_mac_addr command displays the MAC address of the switcher.

Syntax

```
#show_mac_addr
```

Parameters

None

Example

```
#show_mac_addr
MAC ADDRESS IS 00:1c:91:03:b0:00
```

#show_netmask

The #show_netmask command displays the current net mask of the HD Video Wall Controller. Use the #set_netmask command to set the net mask.

Syntax

```
#show_netmask
```

Parameters

None

Example

```
#show_netmask
NETMASK : 255.255.255.0
```

#show_osd

The #show_osd command displays the current OSD state (ON or OFF).

Syntax

```
#show_osd
```

Parameters

None

Example

```
#show_osd
OSD IS SET TO ON
```

#show_output

The #show_output command displays the current output resolution for the display area. Use the #set_output command to set the output resolution of the display area.

Syntax

```
#show_output
```

Parameters

None

Example

```
#show_output
OUTPUT RESOLUTION IS SET TO 1280x720P 60HZ
```

#show_power

The #show_power command displays the current power state. Use the #power command to power-ON or power-OFF the switcher.

Syntax

```
#show_power
```

Parameters

None

Example

```
#show_power
POWER IS ON
```

#show_preset_name

The #show_preset_name command displays the name of the specified preset.
To assign a name to a preset, use the #set_preset_name command.

Syntax

```
#show_preset_name param1
```

Parameters

param1	Preset	[6 ... 20]

Example

```
#show_preset_name 8
THE NAME FOR PRESET 8 IS:MyWinCfg
```

#show_saturation

The #show_saturation command displays the saturation for all outputs.
Use the #set_saturation command to set the output resolution.

Syntax

```
#show_saturation param1
```

Parameters

param1	Input	[1 ... 4]

Example

```
#show_saturation
INPUT 1 IS SET TO SATURATION VALUE 65
```

#show_tcp_access

The #show_tcp_access command displays the current TCP access state (enabled or disabled). Use the #set_tcp_access command to enable or disable TCP access.

Syntax

```
#show_tcp_access
```

Parameters

None

Example

```
#show_tcp_access
TCP ACCESS IS DISABLED
```

#show_telnet_port

The #show_telnet_port command displays the current Telnet port. Use the #set_telnet_port command to set the Telnet listening port.

Syntax

```
#show_telnet_port
```

Parameters

None

Example

```
#show_telnet_port
TELNET PORT IS 23
```

#show_udp_port

The #show_udp_port command displays the current UDP serial port. Use the #set_udp_port command to set the UDP listening port.

Syntax:

```
#show_udp_port
```

Parameters:

None

Example:

```
#show_udp_port
UDP COMMUNICATION PORT IS: 1002
```

#show_udp_remote_ip

The #show_udp_remote_ip command displays the current remote UDP address. Use the #set_udp_remote_ip command to set the remote UDP address.

Syntax

```
#show_udp_remote_ip
```

Parameters

None

Example

```
#show_udp_remote_ip
UDP REMOTE IP ADDRESS : 192.168.1.227
```

#show_udp_remote_port

The #show_udp_remote_port command displays the current remote UDP port. Use the #set_udp_remote_port command to set the remote UDP port.

Syntax

```
#show_udp_remote_port
```

Parameters

None

Example

```
#show_udp_remote_port
REMOTE UDP COMMUNICATION PORT IS: 508
```

#show_ver_data

The #show_ver_data command displays the current software and hardware version.

Syntax

```
#show_ver_data
```

Parameters

None

Example

```
#show_ver_data
SOFTWARE AND HARDWARE VERSION:V1.13
```

#unmask

The #unmask command unmasks the specified output(s). Use the #mask command to mask the specified output(s). If *param1* = 0, then all outputs are unmasked.

Syntax

```
#unmask param1
```

Parameters

param1	Output	[0 ... 4]

Example

```
#unmask 2
WINDOW 2 IS UNMASKED
```

#use_tcp_access

The `#use_tcp_access` command enables or disables Telnet access.

Syntax

```
#use_tcp_access param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable Telnet access
1	Enable Telnet access

Example

```
#use_tcp_access 1
TCP ACCESS IS ENABLED
```

#use_telnet_pass

The `#use_telnet_pass` command forces the password credentials for each Telnet session. The default setting is disabled. Use the `#set_telnet_pass` command to set the Telnet password.

Syntax

```
#use_telnet_pass param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable password
1	Enable password

Example

```
#use_telnet_pass 1
TELNET INTERACE PASSWORD IS ENABLED
```

#use_udp_access

The `#use_udp_access` command enables or disables UDP access.

Syntax

```
#use_udp_access param1
```

Parameters

param1 Value [0 ... 1]

Value	Description
0	Disable UDP access
1	Enable UDP access

Example

```
#use_udp_access 1
UDP ACCESS IS ENABLED
```

m

The m command displays the current routing status of the 4x1 Multiview Seamless Switcher. Masking and locking status of the switcher is also provided. Do not precede the m command with the "#' symbol.

Syntax

m

Parameters

None

Example

```
m
INPUT 1 IS ROUTED TO WINDOW OUTPUT A
INPUT 2 IS ROUTED TO WINDOW OUTPUT B
INPUT 3 IS ROUTED TO WINDOW OUTPUT C
INPUT 4 IS ROUTED TO WINDOW OUTPUT D
```

r

The r command routes the specified input to the output. Do not precede this command with the "#" symbol. Also see the s command. If *param2* = 0, then the specified input (*param1*) will be routed to all outputs.

Syntax

```
r param1 param2
```

Parameters

param1	Input	[1 ... 4]
param2	Output	[0, A ... D]

Examples

```
r 3 a
INPUT 3 IS ROUTED TO WINDOW OUTPUT A


r 1 0
INPUT 1 IS SET TO ALL WINDOW OUTPUTS
```

s

The s command routes the specified input to all outputs. Do not precede this command with the "#" symbol.

Syntax

```
s param1
```

Parameters

param1	Input	[1 ... 4]

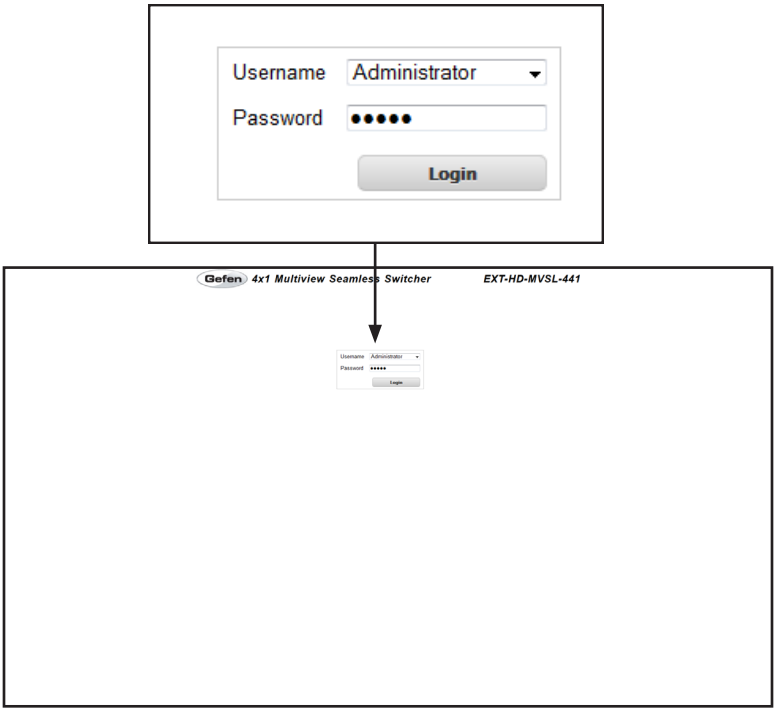
Example

```
s 2
ALL OUTPUTS ARE ROUTED TO INPUT 2
```

Web Interface

Using the built-in Web Interface

Access the built-in Web interface by entering the IP address of the 4x1 Multiview Seamless Switcher that was specified in step 3 under IP / UDP Configuration. Once connected to the switcher, the login screen will be displayed.



Username
Select the username from the drop-down list.

Options:
`Operator, Administrator`

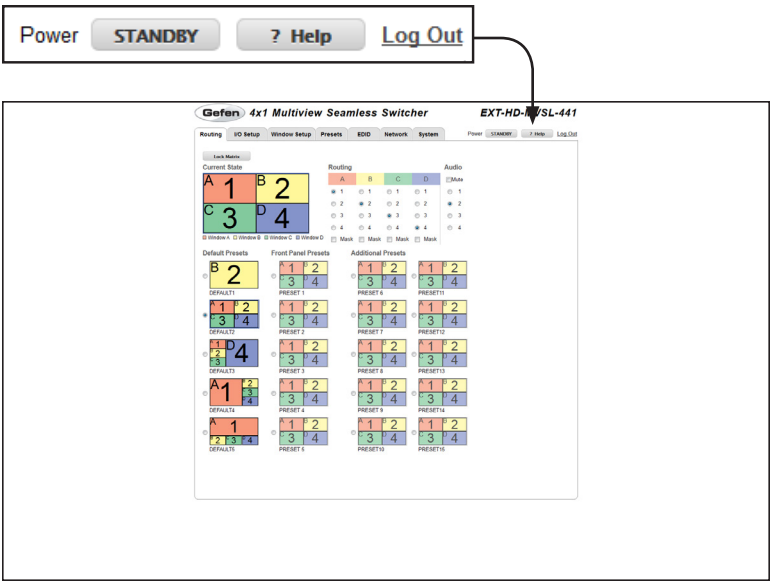
Administrator login provides unrestricted access to all features and settings. Operator login limits access to routing, display information, and routing preset features.

Password
Enter the password for the associated username. The password can also be set using the `#set_webui_op_pass` and the `#set_webui_ad_pass` commands. The password is masked when it is entered.

The Web interface is divided into seven pages: **Routing**, **I/O Setup**, **Window Setup**, **Presets**, **EDID**, **Network**, and **System**. Each main page is represented by a tab at the top of the screen. The **EDID** page has its own set of sub-tabs. Click on the desired tab to open the desired page.

NOTE: In order to view all seven tabs at the top of the screen, the user must be logged in as "Administrator". If logged-in as "Operator", only the **Routing** tab will be visible.

Routing



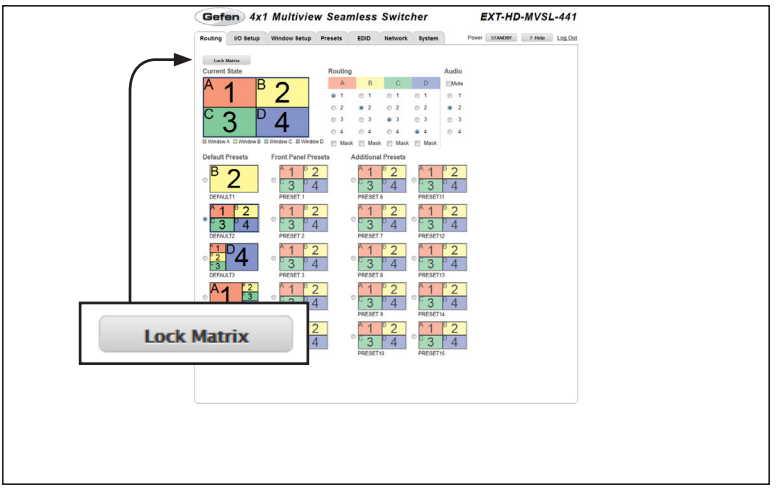
Power
Click this button to toggle the power state of the 4x1 Multiview Seamless Switcher. When the switcher is powered-on, the button will read "STANDBY".

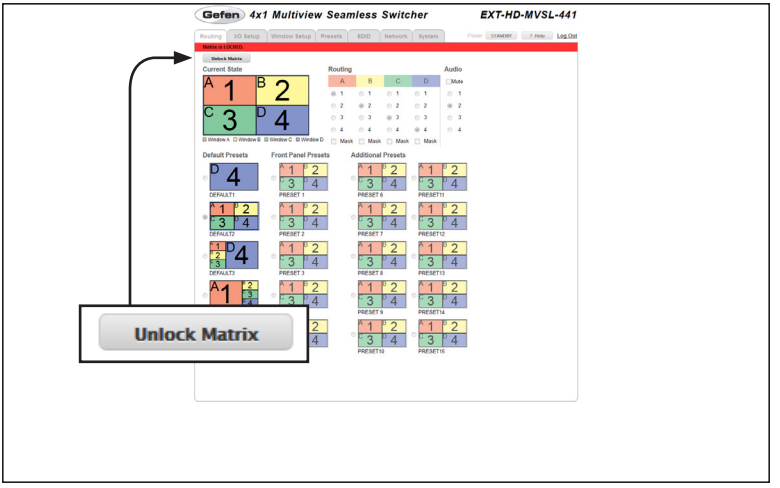
? Help
Click the "? Help" button to display context-sensitive help. This button is available on all pages.

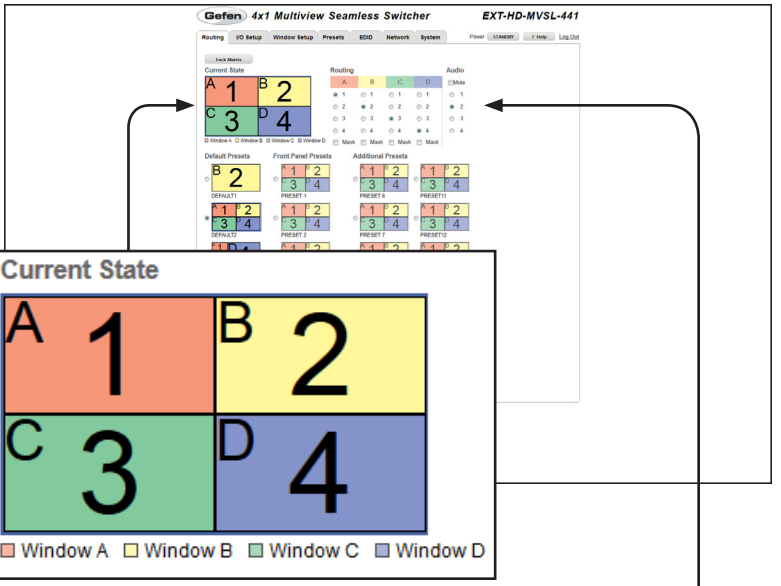
Log Out
Click **Log Out** to terminate the current Web session are return to the login page.

Lock Matrix

Locks or unlocks the matrix. Once the matrix is locked, settings cannot be changed using the front-panel buttons or through the Web GUI. When the matrix is locked, the button text will read “Unlock Matrix” and a red bar will appear across the top portion of the screen with the text “Matrix is LOCKED”. Click the “Unlock Matrix” button to unlock the matrix.







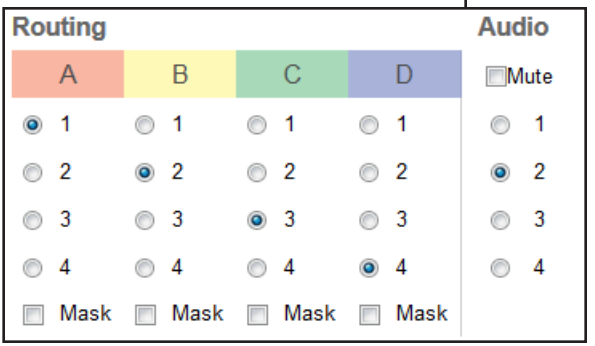
Current preset
Displays the current preset that is loaded into memory.

Each window is color-coded for easy identification. The letter in the upper-left corner of each window represents the output.

The input used by each window output is displayed using a number from 1 to 4.

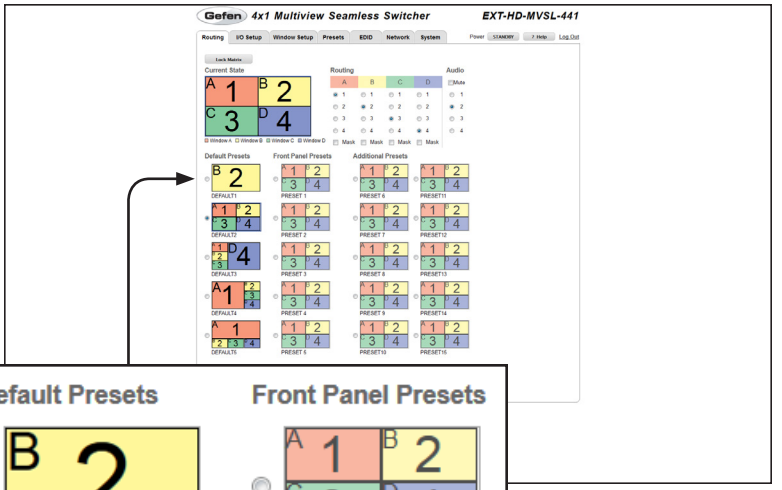
Routing
Click the radio button to select the desired input. Each column represents an output.

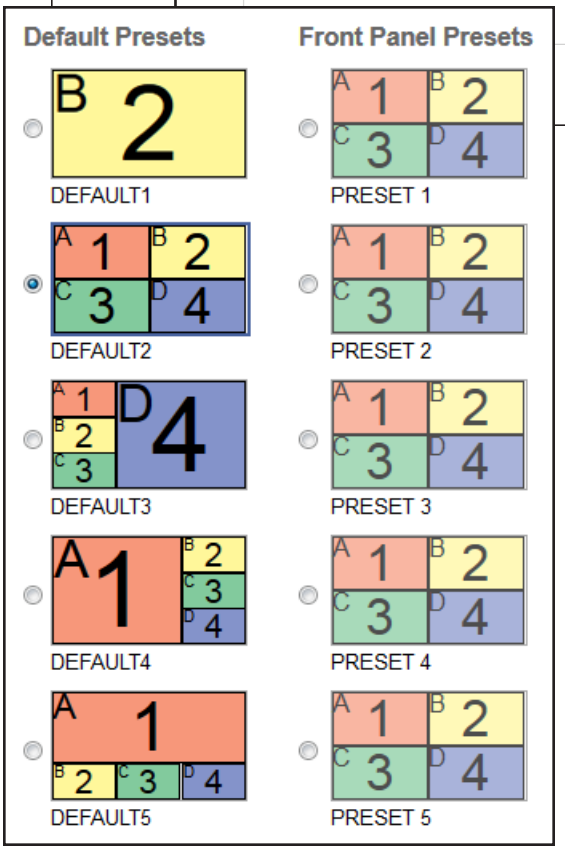
Mask
Click to place a check mark in the check box in order to mask the selected output. Click to clear the check box and remove the mask.



Audio
Click the radio button to select the input to be used as the audio source.

Mute
Click to place a check mark in this check box in order to mute the selected input. Click to clear the check box and un-mute the input.

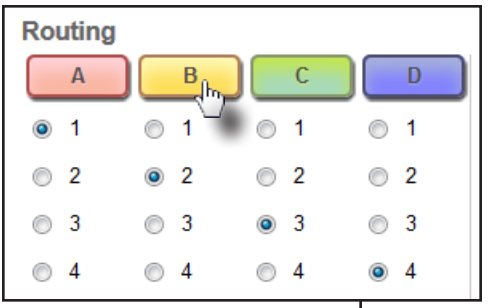


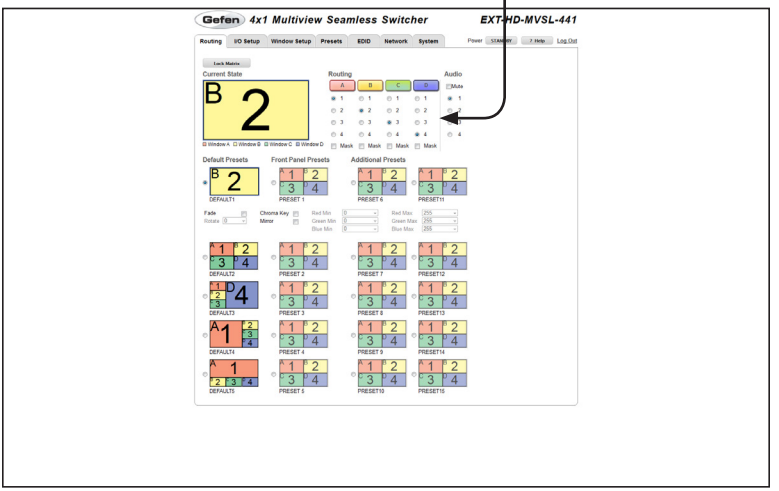


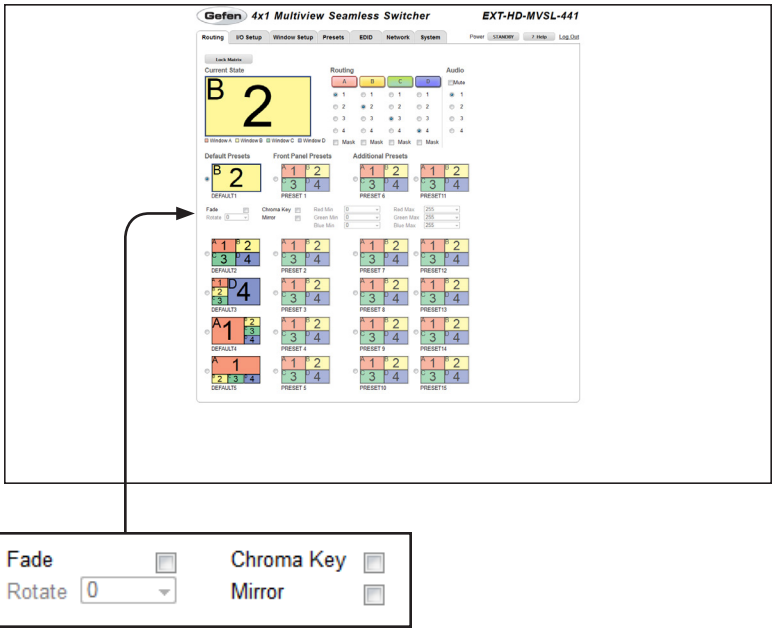
Default Presets
Click the radio button to select the desired preset. The default presets are identical to the Default preset buttons on the front panel of the matrix. If Default 1 preset is selected, then additional image adjustment information will be displayed. See the next page for details on each of these features.

Front Panel Presets
Click the radio button to select the desired preset. These presets are identical to the Custom buttons on the front panel of the matrix.

Routing (Default 1 only)
When the Default 1 preset is loaded, routing buttons will appear over each column of inputs. Click these buttons (A - D) to change the output that is displayed. Each output will use the currently selected input (1 - 4).





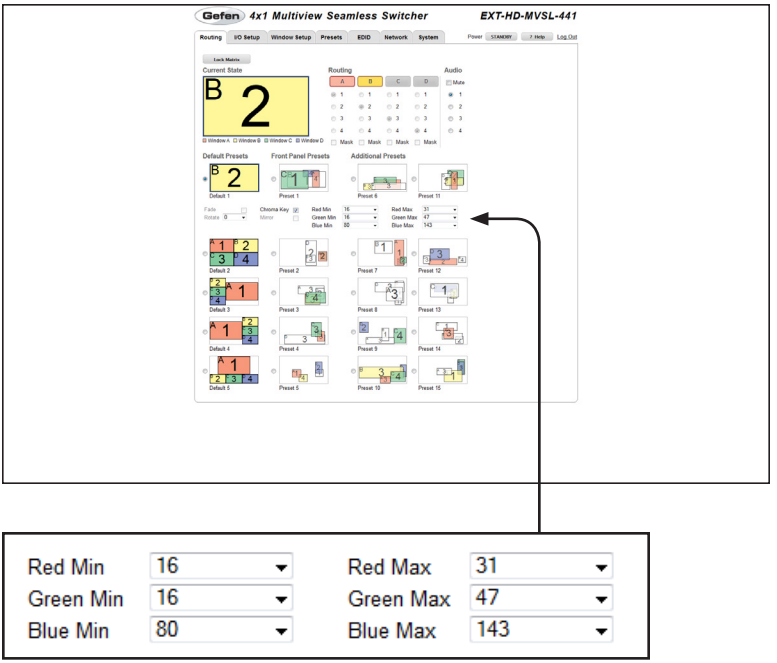


Fade
This feature adds a 1 second transition between window output A and another window output. Click to place a check mark in the check box to enable the fade effect. Click to clear the check box and disable the fade effect. See Using Fade for more information using this effect.

Rotate
This feature will be available in a future release of firmware.

Chroma Key
Click to place a check mark in the check box in order to enable chroma keying for window output A. Click to clear the check box and disable the chroma keying. See Using Chroma Key for more information.

Mirror
Applies a horizontal transformation (rotated 180° about the y-axis) to window output A. See Using Mirror for more information on using this effect.

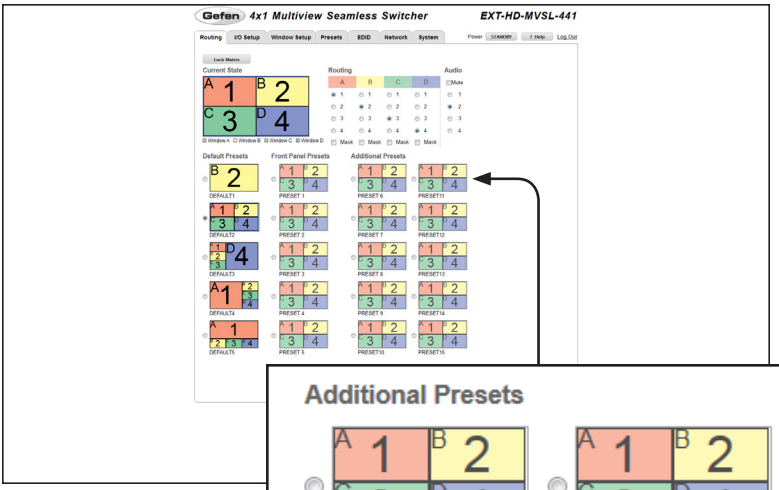


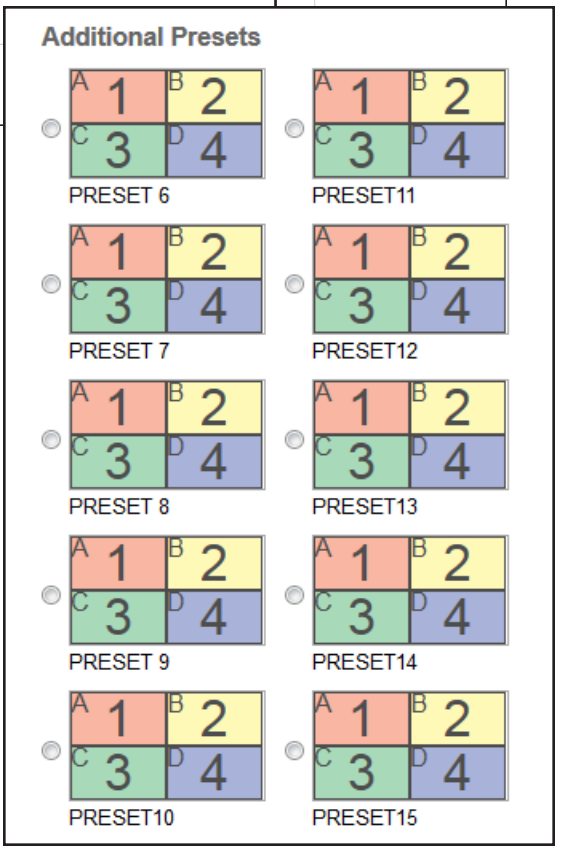
Min (Red, Green, Blue)
Click the drop-down list to select the desired minimum RGB colors for the chroma key value. See Using Chroma Key for more information.

Max (Red, Green, Blue)
Click the drop-down list to select the desired maximum RGB colors for the chroma key value. See Using Chroma Key for more information.

The Chroma Key check box must be enabled in order to access each of these drop-down lists.

Options (min. / max. values)	
0	128
16	144
32	160
48	176
64	192
80	208
96	224
112	240

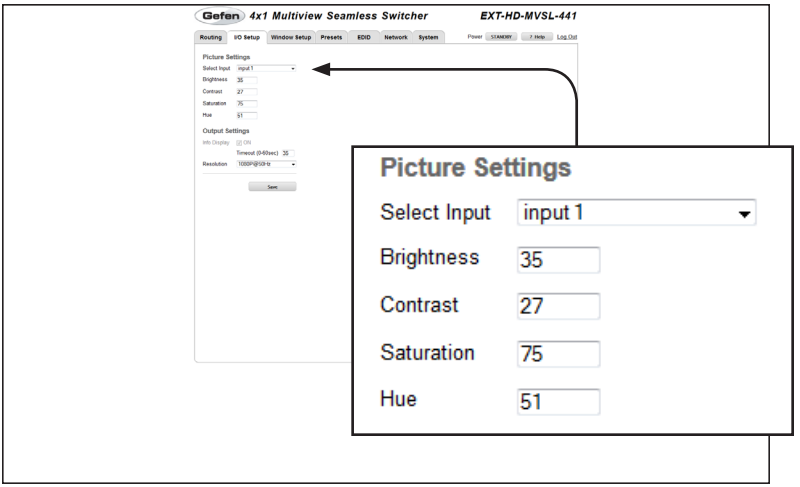




Additional Presets
The Web interface provides an additional 10 presets which are not available from the front panel buttons. Click the radio button to select the desired preset.

By default, each of these presets use the same window arrangement as Default Preset 2.

I/O Setup



Select Input
Select the desired input from the drop-down list. The Brightness, Contrast, Saturation, and Hue settings are applied to the selected input.

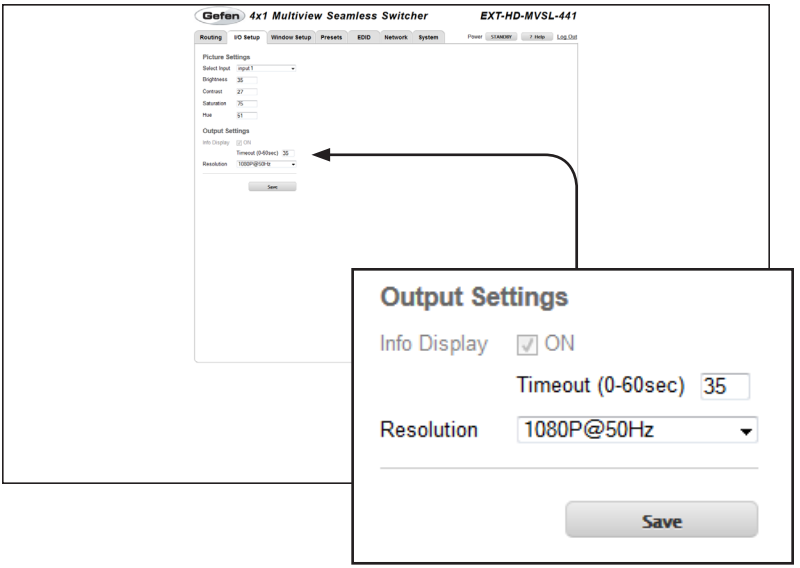
Options
input 1
input 2
input 3
input 4

Brightness
Enter the desired brightness value in this field.

Contrast
Enter the desired contrast value in this field.

Saturation
Enter the desired saturation value in this field.

Hue
Enter the desired hue value in this field.



Info Display
This feature will be available in a future release of firmware.

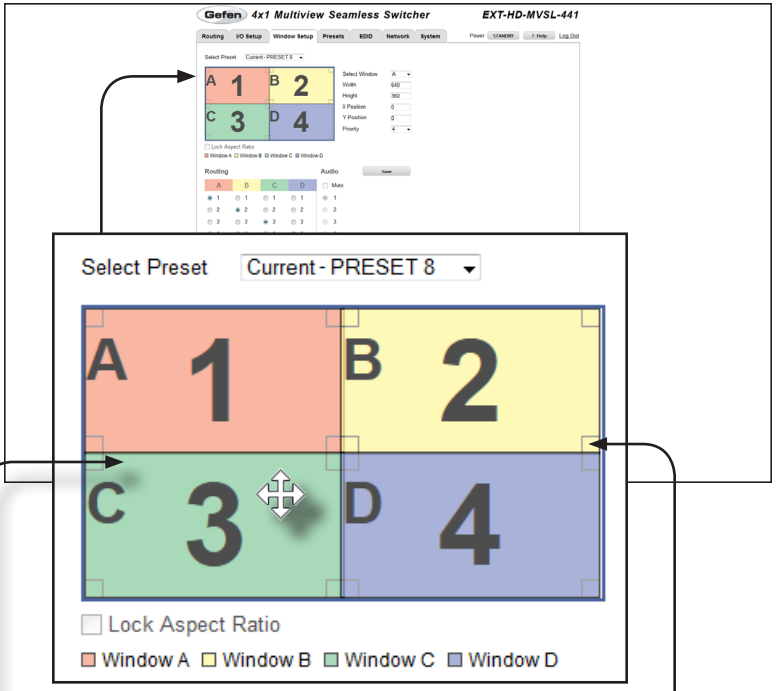
Timeout (0 - 60 sec)
Enter the timeout (duration) value in this field.

Resolution
Select the desired output resolution from the drop-down list.

Options	
480p	1280 x 1024
576p	1366 x 768
720p @ 50 Hz	1440 x 900
720p @ 60 Hz	1600 x 900
1080p @ 24 Hz	1600 x 1200
1080p @ 50 Hz	1680 x 1050
1080p @ 60 Hz	1920 x 1200
1024 x 768	Native
1280 x 800	

Save
Click to save the current settings.

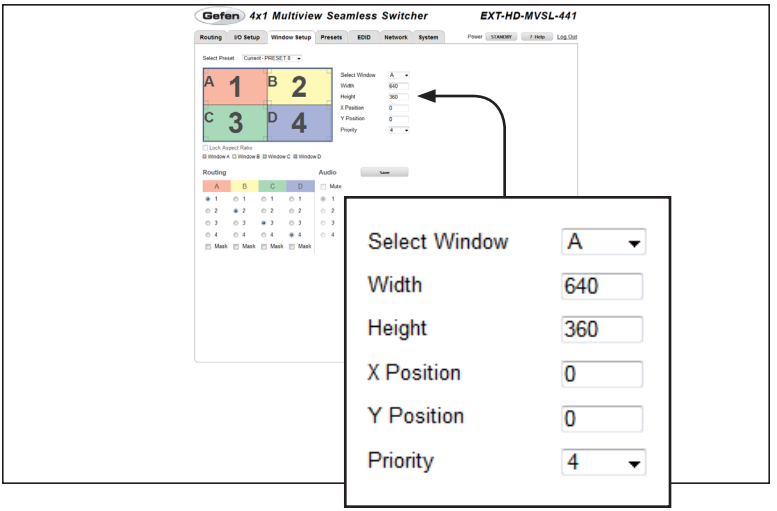
Window Setup



Select Preset
Click this drop-down list to select and load the desired preset.

Lock Aspect Ratio
Click to place a check mark in the check box in order to lock the aspect ratio. When enabled, the height and width of a window will be proportional when resized. Click to clear the check box and allow the window to be resized, without restriction.

Interactive Workspace
Position the mouse over any window in this area to display the "move" icon. Click and drag to reposition a window. The selected window will be displayed in the Select Window drop-down list (see the next page). Windows can also be re-sized to the desired height and width by clicking and dragging any of the four corners of a window.



Select Window
Click this drop-down list to select the desired window. A window can also be selected by clicking the desired window in the Interactive Workspace (see the previous page).

Width
The width (in pixels) of the selected window. If this value is changed, the associated window in the interactive workspace will automatically be updated. Alternatively, if the window is resized using the mouse, this value is automatically updated.

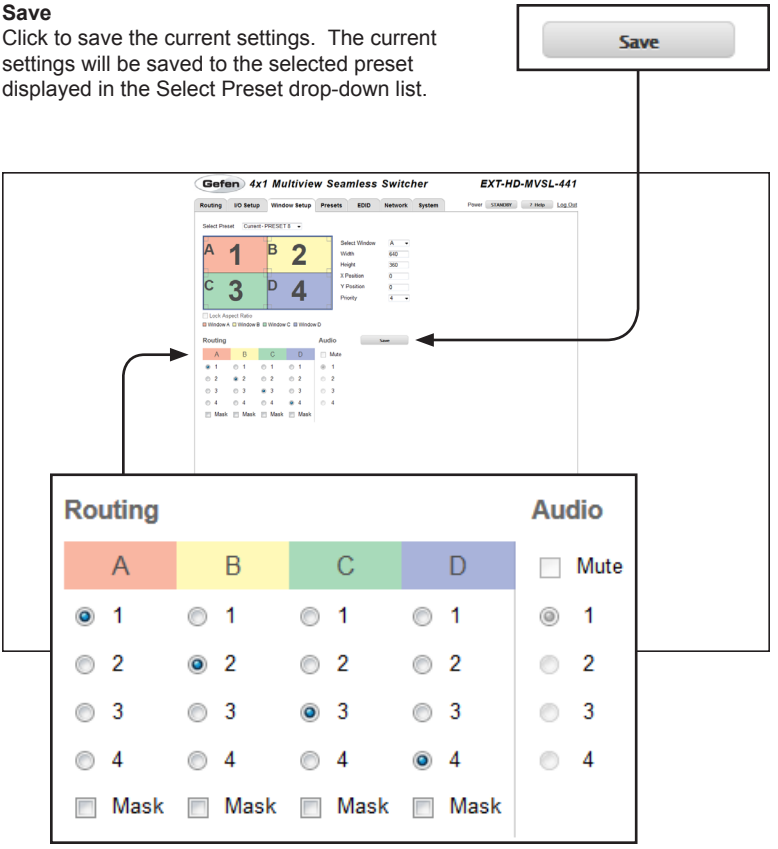
Height
The height (in pixels) of the selected window. If this value is changed, the associated window in the interactive workspace will automatically be updated. Alternatively, if the window is resized using the mouse, this value is automatically updated.

X Position
The horizontal position (in pixels), relative to the current output resolution, of the selected window. If this value is changed, the associated window in the interactive workspace will automatically be updated. Alternatively, if the window is repositioned using the mouse, this value is automatically updated.

Y Position
The vertical position (in pixels), relative to the current output resolution, of the selected window. If this value is changed, the associated window in the interactive workspace will automatically be updated. Alternatively, if the window is repositioned using the mouse, this value is automatically updated.

Priority
Click this drop-down list to change the priority of the selected window.
See Window Priority for more information on this feature.

Save
Click to save the current settings. The current settings will be saved to the selected preset displayed in the Select Preset drop-down list.



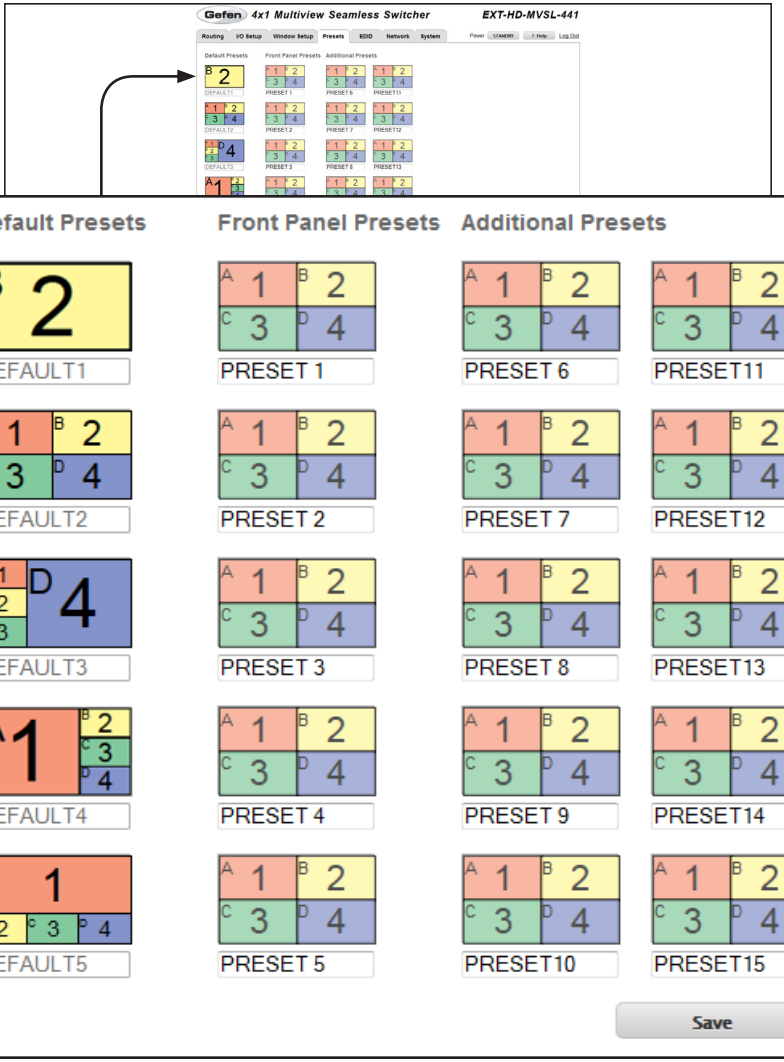
Routing
Click the radio button to select the desired input. Each column represents an output.

Mask
Click to place a check mark in the check box in order to mask the selected output. Click to clear the check box and remove the mask.

Audio
Click the radio button to select the input to be used as the audio source.
The `#set_audio` command can also be used to assign the audio source.

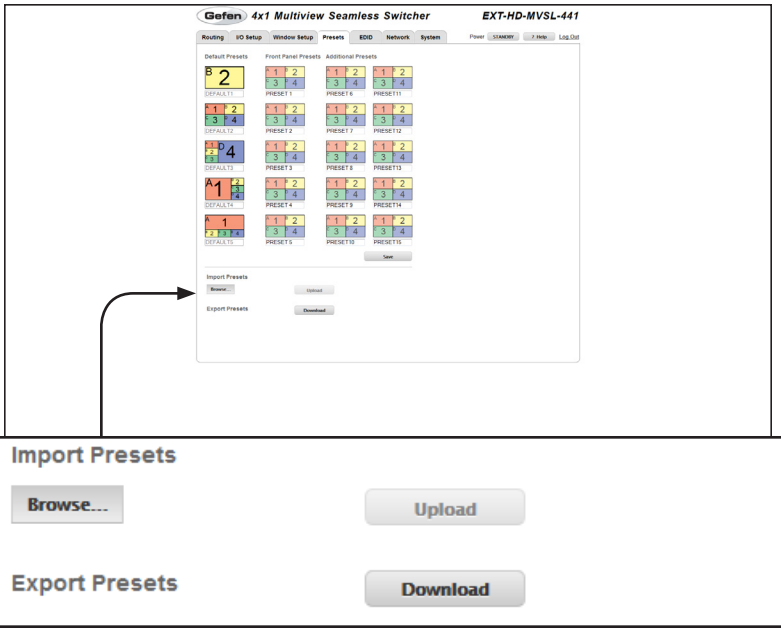
Mute
Click to place a check mark in this check box in order to mute the selected input. Click to clear the check box and unmute the input.

Presets



Preset Names
Type the desired name of each preset in these fields.

Save
Click to save the changes to the preset names.



Browse...
Click this button to select the desired preset file.

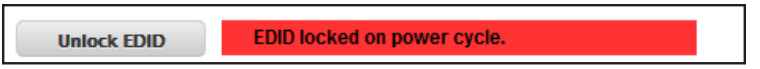
Upload
Click this button to upload the preset file to the switcher.

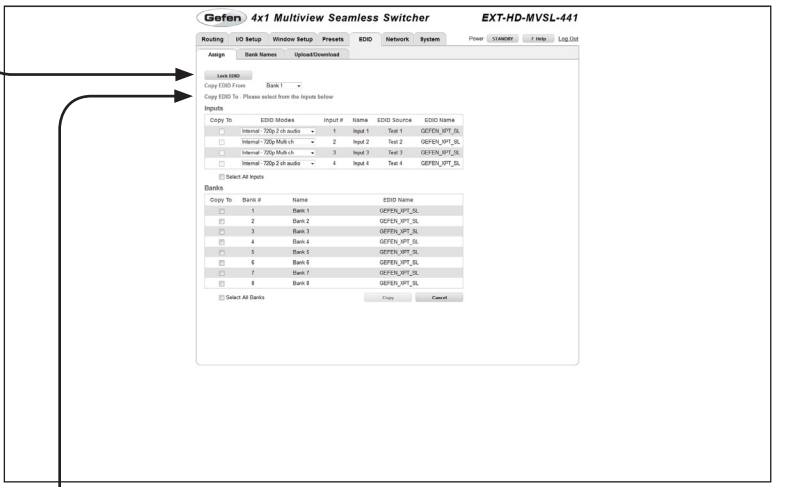
Download
Click to save the current preset configurations and names to file.

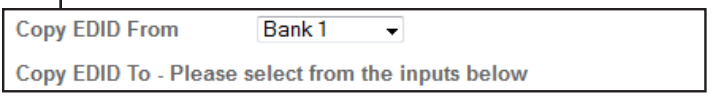
EDID ▶ Assign

Lock EDID
Secures the Local EDID and disables automatic EDID loading during power-up.

If the **Lock EDID** button is clicked (enabled), the "EDID locked on power cycle" message will be displayed in red. The local EDID information will now be locked once the switcher is rebooted. Click the **Unlock EDID** button to disable the Lock EDID feature.

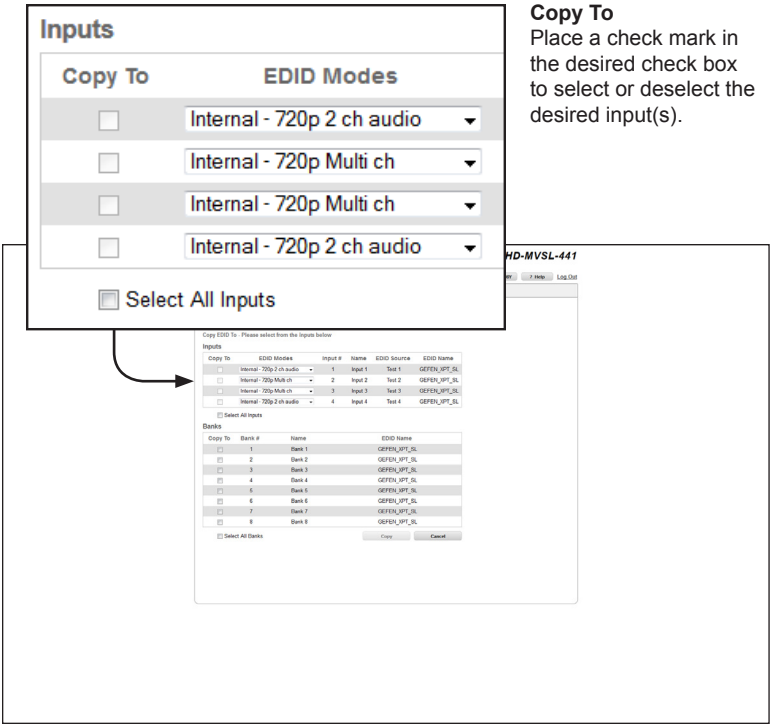






Copy EDID From
Select the EDID from the drop-down list. The EDID will be copied from the Output or selected EDID bank to the destination

Options
Bank 1 ... Bank 8
A - Output 1

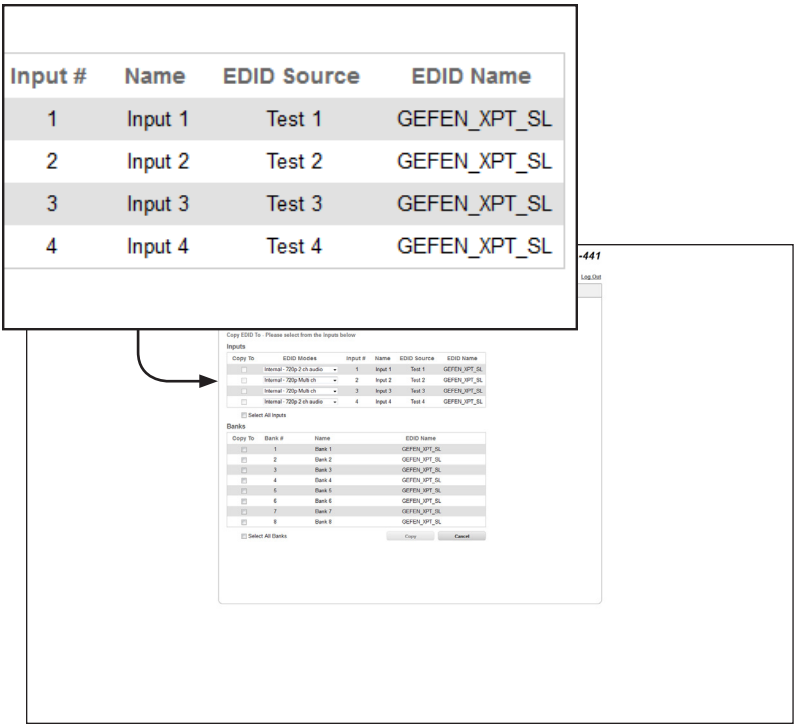


Copy To
Place a check mark in the desired check box to select or deselect the desired input(s).

EDID Modes
Select the EDID mode from the drop-down list.

Options
Internal - 720p 2 ch audio
Internal - 720p Multi ch
Internal - 1080p 2 ch audio
Internal - 1080p Multi ch
External - Output
Custom - User

Select All Inputs
Click to place a check mark in the check box to select all inputs. Click to clear the check box and allow the deselect all inputs.



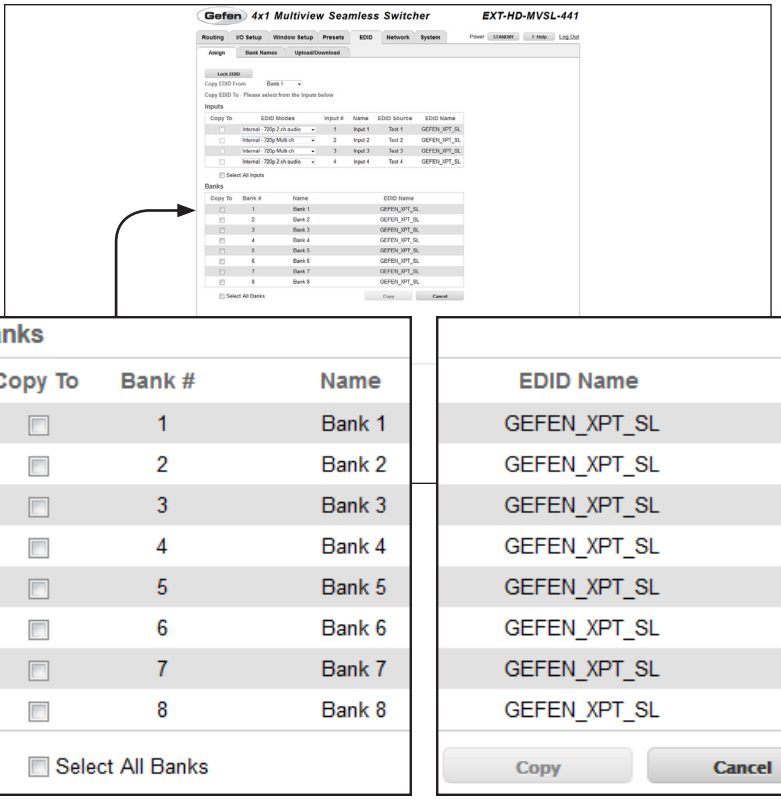
Input #	Name	EDID Source	EDID Name
1	Input 1	Test 1	GEFEN_XPT_SL
2	Input 2	Test 2	GEFEN_XPT_SL
3	Input 3	Test 3	GEFEN_XPT_SL
4	Input 4	Test 4	GEFEN_XPT_SL

Input #
The number of the input.

Name
The name of the input.

EDID Source
The current EDID source being used.

EDID Name
The name of the EDID.



Copy To
Click to place a check mark in the check box where the EDID will be copied. Click to clear the check box and deselect the bank.

Bank #
The number of the bank.

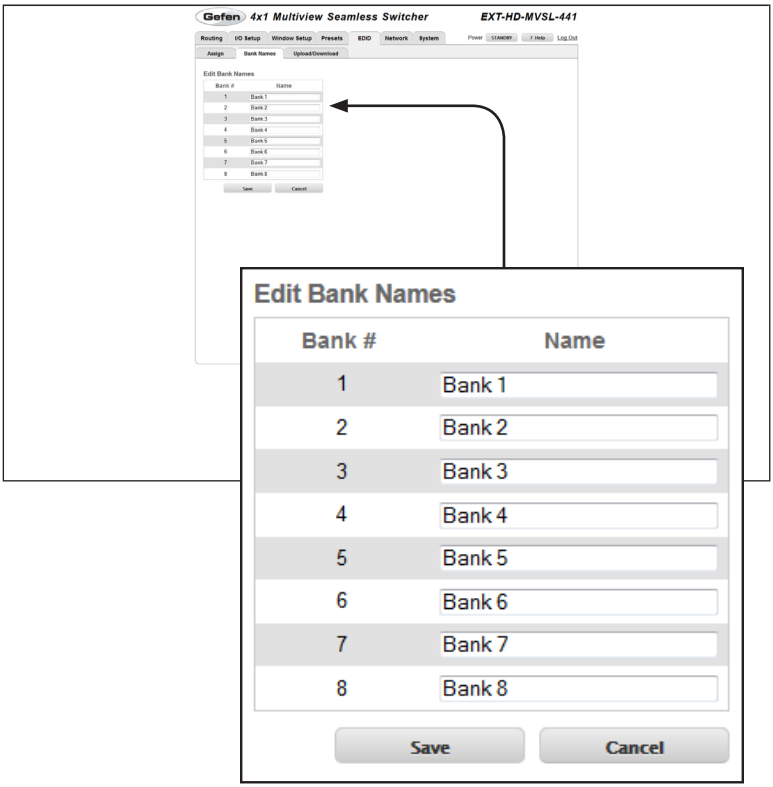
Name
The name of the bank.

Select All Banks
Click to place a check mark in the check box in order to select all banks. Click to clear the check box and deselect all banks.

Copy
Press this button to execute the copy operation.

Cancel
Clears all check marks from each box.

EDID ▶ Bank Names



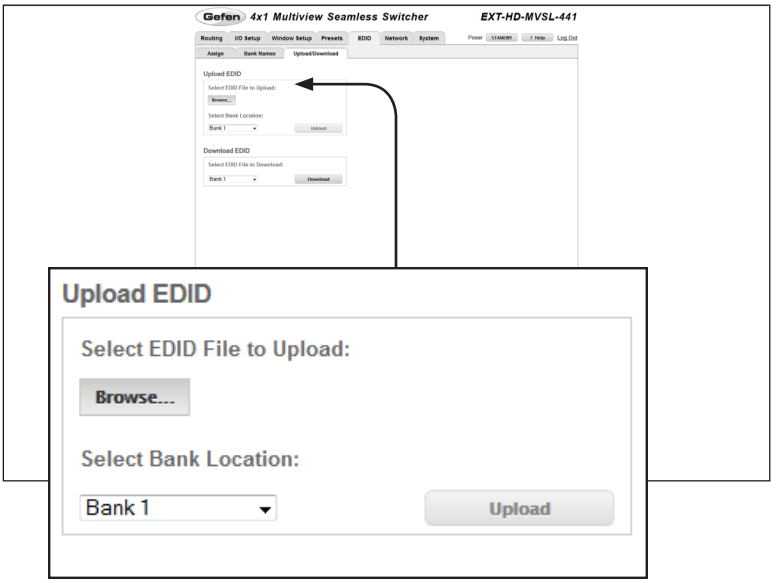
Bank #
Indicates the EDID bank number.

Name
Type the desired name of the EDID bank in this field.

Save
Saves the current name change to the EDID bank(s).

Cancel
Restores the previous name or each bank, if the name was edited.

EDID ▶ Upload / Download

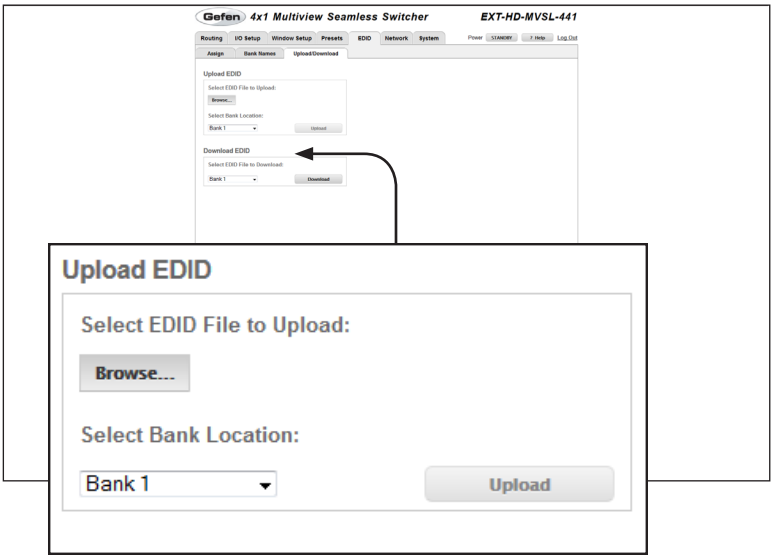


Browse...
Click this button to select the EDID file to be uploaded.

Select Bank Location
Click this drop-down list to select the bank to where the EDID will be uploaded.

Options
Bank 1 ... Bank 8

Upload
Click this button to upload the EDID to the specified bank.

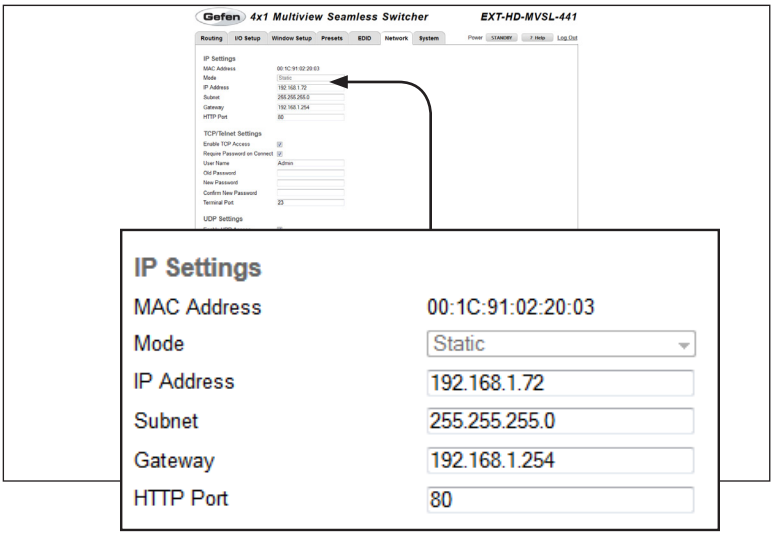


Select EDID File to Download
Click this box to select the EDID that is to be saved to a file. The EDID file will be saved in binary (.bin) format.

Options
Bank 1 ... Bank 8
A -
1 - ... 4 -

Download
Click this button to download the selected EDID to a file.

Network



MAC Address
The MAC address of the switcher. The MAC address cannot be changed.

Mode
The network mode setting.

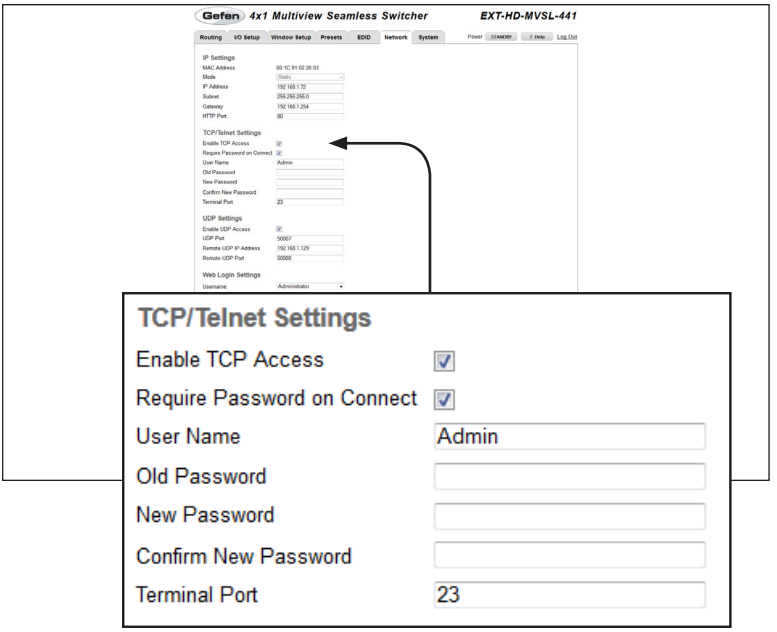
Options
Static
DHCP

IP Address
Enter the IP address of the switcher in this field. This option is only available if the network mode is set to `static`.

Subnet
Enter the subnet mask of the switcher in this field. This option is only available if the network mode is set to `static`.

Gateway
Enter the gateway (router) address in this field. This option is only available if the network mode is set to `static`.

HTTP
Enter the HTTP listening port in this field.



Enable UDP Access
Click to place a check mark in the check box to enable TCP. Click to clear the check box and disable TCP access.

Require Password on Connect
Click to place a check mark in the check box to force the password prompt at the beginning of a Telnet session. Click to clear the check box and disable the password prompt.

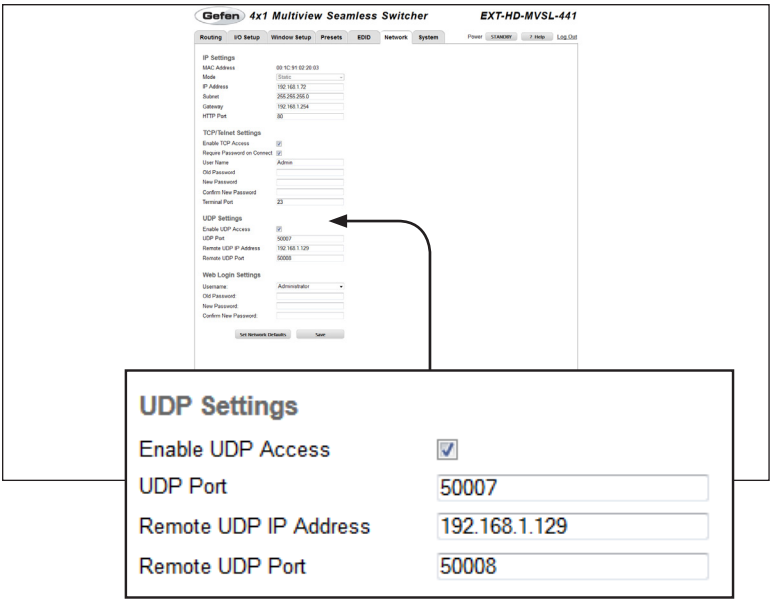
User Name
Enter the user name, required for login, in this field.

Old Password
Type the current (old) password in this field.

New Password
Type the new password in this field.

Confirm Password
Type the new password in this field.

Terminal Port
Enter the Telnet listening port in this field.



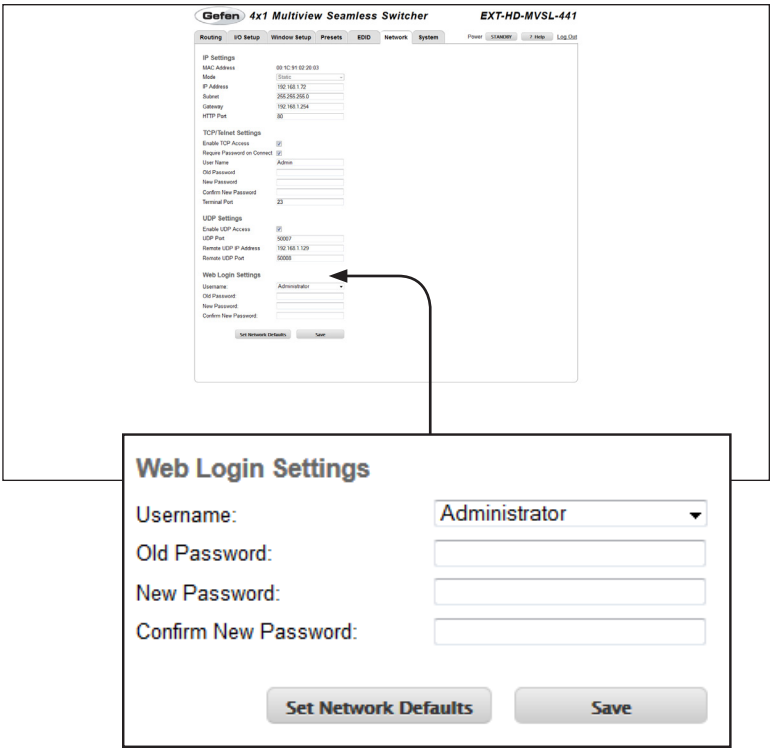
Enable UDP Access
Click to place a check mark in the check box to enable UDP access. Click to clear the check box and disable UDP access.

UDP Port
Enter the UDP listening port in this field.

Enable UDP Echo
Place a check mark in this box to enable UDP echo.

Destination UDP IP Address
Enter the remote UDP IP address in this field.

Destination UDP Port
Enter the remote UDP listening port in this field.



Username
Click this drop-down list to select the user name. The password for the selected user name can be changed, if desired.

Old Password
Type the current (old) password in this field.

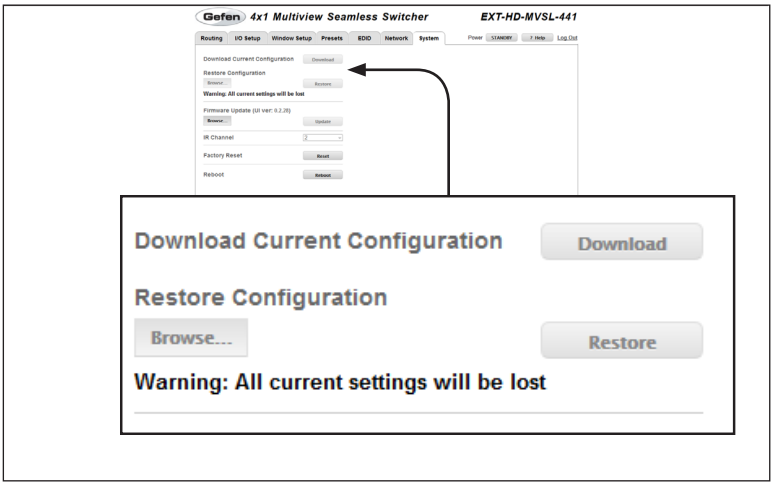
New Password
Type the new password in this field.

Confirm Password
Re-type the new password in this field.

Set Network Defaults
Click to reset the network settings to factory-default.

Save
Click this button to save any network changes made on this page.

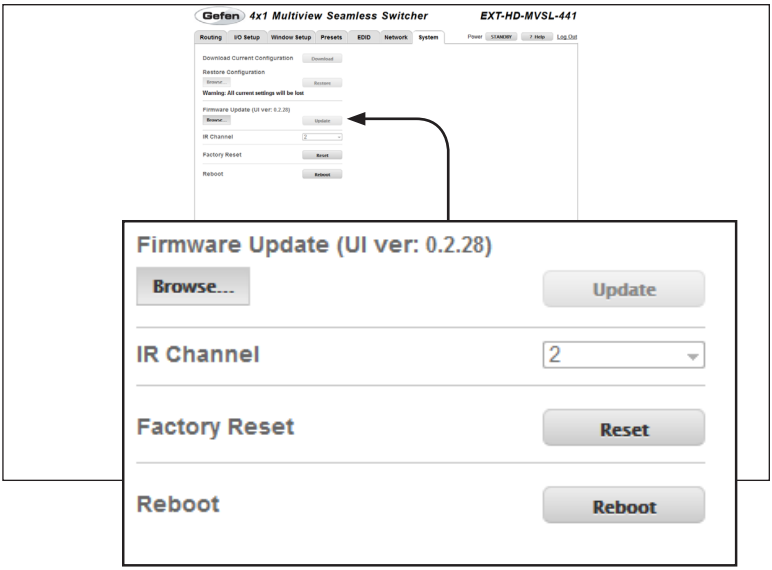
System



Download
This feature will be available in a future release of firmware.

Browse...
This feature will be available in a future release of firmware.

Restore
This feature will be available in a future release of firmware.



Browse...
Click this button to select the firmware file to be uploaded. See Upgrading the Firmware for details on updating the firmware.

Update
Click this button to begin the update process, once the firmware file is selected.

IR Channel
This feature will be available in a future release of firmware. The IR channel of the 4x1 Multiview Seamless Switcher for HDMI is set to channel 0. The IR remote must be set to the same channel. See Setting the IR Channel for more information.

Reset
Click this button to set the switcher to factory-default settings. The TCP/IP settings are preserved.

Reboot
Click this button to reboot the switcher.

Multiview Seamless Switcher

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Upgrading the Firmware

IMPORTANT: *DO NOT* power-off or disconnect the AC power cord from the switcher, at any time, during the firmware upgrade process.

1. Download the firmware update from the Support section of the Gefen Web site.
2. Extract the firmware file from the .ZIP file.
3. Power-ON the 4x1 Multiview Seamless Switcher for HDMI.

Connect an Ethernet cable between the matrix and the computer running the Web interface.

It is unnecessary to disconnect any cables or extenders from the 4x1 Multiview Seamless Switcher for HDMI during the upgrade process.

4. Click the **System** tab in the Web interface and click the **Browse...** button under the **Firmware Update** section.
5. Select the firmware file and click the **Update** button.
6. The switcher will display a prompt to verify that the current firmware will be overwritten. Click the **OK** button on the dialog box to begin uploading the firmware file.
7. The 4x1 Multiview Seamless Switcher for HDMI will begin the upgrade process. This process will take several minutes. The upgrade process may be monitored using the RS-232 interface.
8. After the 4x1 Multiview Seamless Switcher for HDMI has been updated, the unit will automatically reboot.
9. The firmware upgrade process is complete.

Specifications

Supported Formats	
Resolutions (max.)	• 1080p Full HD • 1920 x 1200 (WUXGA)

Electrical	
Maximum Pixel Clock	• 225 MHz
Preset Select Buttons	• 10 x Tact-type, blue backlight
Window Select Buttons	• 4 x Tact-type, blue backlight
Menu Button	• 1 x Tact-type, blue backlight
Menu Control Buttons	• 6 x Tact-type, blue backlight
On / Standby Button	• 1 x Tact-type, blue backlight
Standby Indicator	• 1 x LED, red
Input Indicators	• 20 x LED, blue

Connectors	
Video Input	• 4 x HDMI Type A 19-pin, female, locking
Video Output	• 1 x HDMI Type A 19-pin, female, locking
RS-232	• 1 x DB-9, female
IP Control	• 1 x RJ-45
USB	• Mini-B
IR Extender	• 1 x 3.5mm mini-stereo
Power	• Locking-type

Operational	
Power Input	• 12V DC
Power Consumption	• 24W (max.)

Physical	
Dimensions (W x H x D)	• 16.9” x 1.7“ x 7.9” (430mm x 42mm x 200mm)
Unit Weight	• 5.0 lbs (2.3 kg)

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This product uses UL or CE listed power supplies.